2025 INDEPENDENCE PW STANDARDS

City of Independence – Public Works Department

555 S. Main St., Independence, OR 97051

These Standards were compiled by information obtained from, or input received from the following sources:

American Association of State Highway and Transportation Officials
American Public Works Association
American Water Works Association
Asphalt Institute
City of Independence Public Works Standards (Westech Engineers)
King County, Washington
Oregon Department of Environmental Quality
Oregon Department of Fish and Wildlife
Oregon Department of Transportation
Oregon Health Division
Portland Cement Association
Portland General Electric
Stormwater Management Manual for Western Washington

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

FOREWORD

The 2025 edition of the City of Independence Public Works Standards will provide technical engineering design and construction information standards for all Public Works transportation projects, storm system projects, sanitary sewer projects, and water distribution system projects in the interest of health, safety and welfare of the residents of the City of Independence. These Public Works Standards – 2025 will supersede all previously issued Standard Specifications. Interpretation and enforcement of these standards shall be the responsibility of the City of Independence Public Works Department.

All federal, state, county or local laws and ordinances are to be adhered to. If there is any conflict between the Standard Specifications and pertinent laws and ordinances, the laws and ordinances shall prevail.

REVISIONS TO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

Revision 2/20/2025

Revised Roadway Detail Drawings

Revision 2/27/2025

Revised Chapter 1.

Revision 3/11/2025

Revised Chapter 2.

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Chapter 1 – General Construction & Administrative Requirements

1.1 AUTHORITY AND PURPOSE OF STANDARDS

The Independence Comprehensive Plan addresses land use and development issues within the City. This planning document is a single document with references to many City Ordinances. The Independence Comprehensive Plan and Development Code regulate the divisions of land and the creation of public facilities. The design standards in Section 26 of the Independence Municipal Code codifies the authority for this document and public facility design requirements.

The purpose of these standards is to provide a consistent policy under which certain physical aspects of public facility design will be implemented. Most of the elements contained in this document are Public Works oriented, and it is intended that they apply to both public improvements under City contract and public improvements under private contract designated herein.

These Standards for Public Improvements cannot provide for all situations. They are intended to assist but not substitute for competent work by design professionals. It is expected that engineers will bring to each project the best of skills from their respective disciplines.
The Standards for Public Improvements are also not intended to limit unreasonably any innovative or creative effort which could result in better quality, better cost savings, or both. Any proposed departure from the Standards for Public Improvements will be judged on the likelihood that such variances will produce compensating or comparable results, in every way adequate for the user and City residents.

Alternate materials and methods will be considered for approval by the Public Works Director as the need arises and conditions warrant modification. This consideration will be on a case-by-case basis and require sufficient justification prior to approval.

1.2 INTENT OF STANDARDS

These standards for constructing public facilities in the City of Independence are intended to protect the public health, safety, and welfare by:

- Setting forth uniform design, material, and workmanship standards.
- Supplementing and completing the public health and safety requirements of the Independence Municipal Code.
- Streamlining the administration and construction of public facilities in the city and minimizing repairs, maintenance, and operation to these public facilities.
- Although these Standards are intended to provide requirements for design and construction of public facilities, invariably situations will arise that are not clearly covered by these Standards. In these situations, the City Public Works Department will review the issue on a case-by-case basis to determine the design and/or construction methodology acceptable to the City.

Nothing in these standards shall relieve any person or organization from the obligation to comply with the applicable laws, rules, and regulations of any federal, state, and local authority.

1.3 SCOPE OF STANDARDS

These standards for construction of public facilities in the City of Independence:

a. Cover all public streets, public easements, drainage, water, sewer, and appurtenant facilities inside the corporate limits of the city that are to be turned over to the City for maintenance and operation.
b. Relate only to public facilities constructed in the City and should not be confused with building codes, zoning ordinances, and other regulations for which the City has established separate procedures and standards.
c. In accordance with Independence Municipal Code Chapter 26, the Public Works Director shall have the authority to modify the Standards and Standard Detail Drawings as needed to address changes in departmental operation and maintenance needs, technology, material standards, agency permitting requirements, and state or federal rules and regulations.

1.4 ENGINEERING POLICY

It shall be the policy of the City of Independence to require compliance with Oregon Revised Statute Chapter 672 for professional engineers and land surveyors.

All engineering plans, reports, or documents shall be prepared by a registered professional engineer, or by a subordinate employed under the engineer's direction, and shall be signed by the engineer and stamped with the engineer's seal to indicate the engineer's responsibility for them. It shall be the engineer's responsibility to review any proposed public facility extension, modification or other change with the City, prior to engineering or proposed design work, to determine any special requirements or whether the proposal is permissible. A "Preliminary Review" and/or a "Plans Approved for Construction" stamp of the City, on the plans, etc., for any job, does not in any way relieve the engineer of the responsibility to meet all requirements of the City or obligation to protect life, health, and property of the public. The plan of any project shall be revised or supplemented at any time it is determined that the full requirements of the City have not been met.

Per interpretations issued by the OSBEELS Professional Practices Committee (December 2016), the design engineer shall seal and sign drawing sheets containing standard details (whether prepared by the City or other agencies), since the details are incorporated into the larger design which is under the responsible charge of the design engineer. It shall be the Design Engineer's responsibility to review any and all standard details incorporated into the design, whether prepared by the City or other agencies, and verify that they are applicable to and appropriate for the proposed design.

Any engineer having submitted to the City false or inaccurate information of a material nature will be warned of their conduct, and the OSBEELS may also be advised.

1.5 APPLICABILITY

These Standards for Public Improvements shall govern all construction and upgrading of all public and privately financed public facilities in the City of Independence and application work within its service areas.

1.6 AVAILABILITY OF STANDARDS

Copies of these Standards for Public Improvements for the City of Independence, Oregon are available to download from the City of Independence website. Hard copies will be made available for pick up at the Office of the Public Works Director given reasonable notice and payment of current reproduction costs.

1.7 REVISIONS TO DESIGN STANDARDS

It is anticipated that revisions to the Standards for Public Improvements will be made from time to time. The date appearing on the revision page or posted on the city website is the date of latest revision. Users should apply the latest published issue to the work contemplated.

Parenthetical notations at the end of the sections indicate the most recent change to those sections. All sections without notations are from the original Standards for Public Improvements as adopted. Some sections may be changed more than once, and it shall be the user's responsibility to maintain his/her copy of these Standards for Public Improvements. Published revisions or updates can be found on the City of Independence Public Works website.

1.8 REFERENCE TO STANDARDS

The design engineer may, at their sole discretion, use the standards by direct reference in the contract documents prepared for the construction of any public street, stormwater, water, and sewer facilities in the City of Independence. If the design engineer incorporates the City's standards in that way, the contract documents shall contain the following statements:

- Material and workmanship shall be in strict accordance with the standard specifications of the City of Independence. No changes from the approved project plans and specifications shall be made without approval of the City Public Works Department.
- The standards are in outline form only and shall not operate to relieve the Design Engineer or Contractor of his or her professional responsibilities during project design and construction.
- These standards represent the minimum requirements for construction in a public right-of-way or public easement to protect the public health, safety and welfare. Any deviation from the standards must be approved, in writing, by the City Public Works Department.

1.9 ORDER OF PRECEDENCE

All federal, state, county or local laws and ordinances are to be adhered to. If there is any conflict between the Standard Specifications and pertinent laws and ordinances, the laws and ordinances shall prevail.

If there is a conflict between approval documents, the document highest in precedence shall control. The precedence shall be:

First: Permits from other agencies or jurisdictions, as may be required by law.

Second: Land use decision-making authority's Conditions of Approval.

Third: City of Independence master plans (latest editions): Transportation Systems Plan, Stormwater Master Plan, Wastewater System Master Plan, Water System Master Plan, and Parks Master Plan.

Note: *Permits, Land Use Conditions of Approval, and Master Plans are intended to provide the authority for what public facilities are to be constructed; the below public works detail drawings and standards and the various standards that follow describe how public facilities are to be constructed through the use of the approval component materials equipment, and methods set forth.*

Fourth: City of Independence Standard Detail Drawings.

Fifth: City of Independence Standard Specifications for Public Works Construction.

Sixth: Oregon Standard Specifications for Construction (current edition) (ODOT, Oregon APWA) and any reference specifications and standard practices adopted by nationally recognized professional societies such as ASCE, AWWA, APWA, ACI, ASTM, and AASHTO, and any reference specifications or guidelines as presented in the MUTCD, latest edition.

Seventh: Americans with Disabilities Act latest approved standards or guidelines as referenced in the Standard Details of these Standards.

Eighth: Plans and details prepared by the design engineer.

Supplemental written agreements, franchise agreements, and approved revision to plans and specifications by the appropriate jurisdictions and conforming to local, state, and federal law will take precedence over documents listed above. Detailed plans shall have precedence over general plans. In any event, the determination of the Public Works Director shall be final.

1.10 GENERAL

Public Works Design Standards may be cited routinely in the text or verbally by city staff as the "Standards", “Design Standards”, or "PWDS". Other specific supplementary standards listed in this document shall be understood to mean the latest version of those standards. These Standards shall apply to all improvements within existing and proposed public right-of-way and public utility easements, to all improvements to be maintained by the City, and to all infrastructure improvements for which the Municipal Code and/or the Development Code requires review and/or approval by the City. These Standards are to be guidelines for designers and developers in preparing their drawings and for City staff in reviewing drawings. Where minimum values are stated, greater values should be used whenever practical; where maximum values are stated, lesser values should be used whenever practical.

In the case of conflicts between the text of these design standards and the standard details, or between the provisions of these design standards and the PWCS, the more stringent as determined by the City Engineer and Public Works Director shall apply. Acceptable materials shall be as outlined in these Design Standards.

All other utility improvements, including telephone, electrical power, gas and cable TV shall meet the current standards of the appropriate agency as well as City standards. Traffic Control Devices shall meet the standards of the current Manual on Uniform Traffic Control Devices, including Oregon amendments.

All applicants/developers are hereby notified that the requirements of the PWDS must be addressed during the design & construction of any improvements which are required due to land use decisions. This applies whether specific PWDS requirements are referenced during the land use approval process, noted in the land use findings or included in the land use approval conditions, since land use approval conditions cannot incorporate or list every code or standard requirement that may be required for a particular project. It is important to understand that the PWDS are not land use regulations (similar to how the requirements of the Oregon Fire Code/OFC or building codes are not land use regulations), and thus the PWDS do not directly impact the decision of whether to approve or deny any land use application, and do not directly control what level of infrastructure improvements that are required as land use conditions of approval for any particular development. Approval or denial of land use decisions should be based on the land use regulations, even though land use conditions may reference the PWDS & OFC provisions in order to clarify the specifics about improvements which may be required.

1.11 APPROVAL OF ALTERNATE MATERIALS OR METHODS

Any Substitution material or alternate method not explicitly approved herein will be considered for approval as set forth in Section 1.1. Persons seeking such approvals shall make application in writing. Approval of any deviation from these Standards for Public Improvements will be in written form. Approval of minor matters will be made in writing if requested.

Any alternate must meet or exceed the minimum requirements set in these Standards for Public Improvements.

The written application is to include, but is not limited to, the manufacturer's specifications and testing results, design drawings, calculations, reason and justification, and other pertinent information.

Any deviations or special problems shall be reviewed on a case-by-case basis and approval by the Public Works Director. When requested by the City, full design calculations shall be submitted for review with the request for approval.

1.11 SPECIAL DESIGN PROBLEMS

Special applications not covered in these Standards for Public Improvements require review and approval by the Public Works Director. Submittal of full design calculations, supplemental drawings and information will be required prior to any approval.

Applications requiring special review and approval may include, but are not limited to, the following:

- Sewer Force Mains
- Relining of Existing Sewers
- Internal Sealing of Existing Sewers
- Sewer Regulatory Devices
- Sewage Pump Stations
- Sewer Siphons
- Sewage Treatment Plants
- Sewer Flow Measurement/Monitoring Device
- Water Distribution Pump Stations
- Water Pressure Regulating Devices
- Energy Dissipaters
- Water Reservoirs
- Water Treatment Plants
- Water Flow Measurement/Monitoring
- Stormwater Facilities
- Stormwater Detention Facilities

1.12 ACRONYMS AND DEFINITIONS

The following is a list of acronyms used throughout these standards:

AASHTO – American Association of State Highway and Transportation Officials
AC – Asphaltic concrete
ACI – American Concrete Institute
ACPA – American Concrete Pavement Association
ADA – Americans with Disabilities Act
ADAAG – Americans with Disabilities Act Accessibility Guidelines and Standards
ADT – Average daily traffic
ANSI – American National Standards Institute

APWA – American Public Works Association
ASTM – American Society for Testing and Materials
AWWA – American Water Works Association
CDF – Control density fill
CFS – Cubic Feet per Second
CEC – Cation exchange capacity
CLSM – Controlled Low-Strength Material
CN – Curve number
DBH – Diameter at Breast Height
DEQ – Oregon Department of Environmental Quality
FEMA – Federal Emergency Management Agency
FHWA – Federal Highway Administration
HMAC – Hot Mixed Asphaltic Concrete
MUTCD – Manual on Uniform Traffic Control Devices, latest edition.
NAVD 88 – North American Vertical Datum of 1988: the vertical control datum established in 1991 by the National Geodetic Survey.
NEMA – National Electrical Manufacturers Association.
NGVD 29 – National Geodetic Vertical Datum of 1929: vertical control datum established for vertical control in the United States by the general adjustment of 1929 (formerly called the "Sea Level Datum of 1929").
NPSH – Net Positive Suction Head, in association with sanitary sewer pumping units.
NRCS – National Resource Conservation Service
ODFW – Oregon Department of Fish and Wildlife
ODOT – Oregon Department of Transportation
ODOT QPL – Qualified Products List; published twice each year by ODOT's Construction Section.
ODOT SSC – Oregon Department of Transportation Standard Specifications for Construction, 2015, or latest edition.
OSHA – Occupational Safety and Health Administration
PCA – Portland Cement Association
PCC – Portland Cement Concrete
PROWAG – Public Right-of-Way Accessibility Guidelines
PRTMP – Current edition of the City of Independence's Parks, Recreation and Trails Master Plan.
PUE – Public Utility Easement
PWDS – Independence Public Works Design Standards
SBUH – Santa Barbara Unit Hydrograph
SCS – Soil Conservation Service, U.S. Department of Agriculture
TSP – The latest edition of the City of Independence's Transportation System Plan.
UGB – Urban Growth Boundary
USCGS – United States Coast and Geodetic Survey
WQV – Water Quality Volume

The following is a list of definitions that apply to these standards:

ACT OF GOD – Earthquake, flood, cyclone, or other cataclysmic natural phenomenon
ADDENDUM – Written or graphic modification or interpretation of contract documents.
AGREEMENT – Written agreement covering performance of work and furnishing of labor and materials in construction of work.
ALLEY – A public access easement or right-of-way not more than 20 feet and not less than 12 feet in width which intersects with a public street. Primarily intended to provide secondary

access to road or side of lots or buildings and not intended for normal through vehicular traffic.

APPLICANT – Person, organization, or duly authorized representative identified as such in specifications and in agreement and referred to throughout contract documents as if singular in number and masculine in gender; means owner or authorized representatives, including parties acting as designated authority for aspects of work.

APPROVE – "Approved," "approve," "approval," or similar words shall mean to give, in writing, limited, conditional, or qualified permission to use material, equipment, or methods, such conditions being in strict compliance with City's standards; approval will be by the Public Works Director or their authorized representative.

APPROVED BACKFLOW PREVENTION DEVICE – A device that has been investigated and approved by the Oregon State Health Division.

ARCPACS – A federation of certifying boards in agriculture, biology, earth, and environmental sciences. Provides professional certification for soil scientists whose education, experience and career path are in some aspect of the soil science profession and can meet the standards of the ARCPAC program

ARTERIAL STREET – A Street intended to carry large volumes of traffic at steady speeds with minimum interruptions to traffic flow.

AS-BUILT PLANS or AS-BUILT DRAWINGS – See Record Drawings.

AUTHORIZED REPRESENTATIVE – Party or parties authorized or employed by applicant to observe, test, or review quality and sufficiency of work performed, materials used, and determine compliance with plans and specification.

BACKFLOW – The flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any sources other than its intended source.

BACKFLOW PREVENTER – A device or means to prevent backflow into the potable water system.

BACK SIPHONAGE – The flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel into a water supply pipe due to a negative pressure in such pipes.

BID BOND – Form of security furnished by Contractor, guaranteeing that he/she will enter into a contract in accordance with contract documents if the proposal is accepted.

BIDDER – Any individual, firm, or corporation formally submitting a proposal for work contemplated, or any part of it, acting directly or through an authorized representative.

BIKE LANES – A designated travel-way for bicyclists which is located within the roadway directly adjacent to the outside vehicular lane or on the shoulder.

BIKE ROUTE – A designated travel-way for bicyclist which is shared with vehicular traffic. The roadway is designated with signs for bicycling (no pavement markings for the bike route or delineation of parking spaces are used).

BIOENGINEERING – A construction methodology used to stabilize and conserve soils through the use of live plants alone or in combination with biodegradable material to produce living, functioning systems that can prevent erosion, control sediment, and provide habitat.

BUILDING SERVICE LATERAL – A public sanitary sewer beginning at the property line or public utility easement line and extending to the sanitary sewer main.

BUILDING SEWER – A private sanitary sewer beginning five (5) feet outside the building and extending to the property line or public easement line, connection to the building service lateral.

BUILDING SUPPLY – The pipe carrying potable water from the water meter or other source of water supply to a building or other point of use or distribution on the lot. Building supply shall also mean customer line.

CERTIFICATE OF INSURANCE – Evidence of insurance coverage of the Contractor, furnished to the City.

CHANGE ORDER – Written order to Contractor by Public Works Director or their City Engineer approving the addition, deletion, or revision of work within general scope of contract, or adjustment in price or time.

CITY – City of Independence

CITY AUTHORIZED REPRESENTATIVE – Party or parties authorized or employed by the City of Independence to observe, test, or review quality and sufficiency of work performed, materials used, and determine compliance with plans and specification. The designated authority shall be the Public Works Director or their authorized representative.

CITY COUNCIL – Seven-member policy making and legislative body responsible for identifying community needs and establishing community policies and goals.

COLLECTION SYSTEMS – Facilities maintained by the City of Independence connected thereto for the collecting, pumping, conveying, and controlling of wastewater.

COLLECTOR SEWER – The portion of the public sewerage system which is primarily installed to receive waste water directly from individual residences and other individual public or private structures.

COLLECTOR STREET – Street which forms the boundary of major blocks of land and is intended primarily for inter-neighborhood traffic; can function as a road to service areas from the arterial system.

CONTRACT – Binding agreement between the Contractor and applicant or the Contractor and City covering performance of work and furnishing of labor and materials for construction of public facilities.

CONTRACTOR – The person or entity that has entered into contract with the applicant or City; "Contractor," though here used to describe an individual, shall mean Contractor, agents, employees, officials, subcontractors, or anyone connected with work set forth on behalf of Contractor.

CONTRACT DOCUMENTS – Agreement, addenda, instructions to bidders, Contractor's proposal, bonds, notice of award, notice to proceed, general provisions, technical provisions, plans, change orders, field orders, and all other modifications of such documents entered into in accordance with contract.

CONTRACT PRICE – Total amount payable to Contractor for work, including all sales, use, and other consumer taxes related to work.

CONTRACT TIME – Number of calendar days allowed Contractor to complete work.

CONSTRUCTION DRAWINGS – Drawings prepared by a registered professional engineer, including site plans, plan and profile views of utilities, cross sections, detailed drawings, etc., or reproductions thereof, approved by the City Engineer, which show the location, character, dimensions and details for the work to be done.

CONSTRUCTION MAINTENANCE ASSURANCE – A one-year maintenance assurance, for 20% of the cost to construct public improvements, required by the City for work performed to ensure post-construction quality and survivability.

CORE – To cut and remove a circular portion of concrete, pavement, pipe or soil

COUNTY ROAD – Public road incorporated into county roadway system by formal action of Board of County Commissioners; these roads are assigned numbers and county assumes maintenance responsibility.

CROSS CONNECTION – Any connection or arrangement, physical or otherwise, between a potable water supply system and any plumbing fixture or any tank, receptacle, equipment or device through which it may be possible for non-potable, used, unclean, polluted and contaminated water, or other subsurface, to enter into any part of such potable water system under any condition.

CUL-DE-SAC – A dead-end street having a turnaround area at the end.

CURB – The line indicating the edge of the vehicular roadway within the overall right-of-way.

CUT SHEETS – Sheets of tabulated data, indicating stationing, structures, fittings, angle points, beginning of curve, points on curve, end of curves, storm drain slope, staking offset, various elevations, offset cuts, and storm drain depths for streets, water lines, sanitary sewers, and storm drains.

DATUM – The vertical elevation control for the City of Independence is based on Oregon Department of Transportation datum.

DEAD-END STREET – A Street or series of streets which can be accessed from only one point. Dead-end streets can be either temporary (intended for future extension as part of a future street plan) or permanent. Permanent dead-end streets must provide adequate turnaround capability.

DESIGN ENGINEER – Professional Engineer registered in the State of Oregon responsible for planning, designing, and producing record drawings of public facilities that will be accepted and owned by the City.

DESIGNATED ARTERIAL OR COLLECTOR STREET – A Street designated as an arterial or collector in the Transportation System Plan.

DETAIL DRAWINGS – Construction drawings produced or approved by the City of Independence providing details of acceptable construction standards for public facilities. Drawings may be periodically updated or changed, as needed, by approval of the Public Works Director.

DETENTION – The holding of runoff for a short period of time and then releasing it to the natural water course where it returns to the hydrologic cycle.

DEVELOPMENT – Development includes new development, redevelopment, and/or partial redevelopment.

DIRECTED, REQUIRED, ETC. – In these standards, “directed,” “required,” “permitted,” “ordered,” “designated,” or similar words shall mean at the direction, requirement, permission, order, or designation of applicant or Public Works Director.

DIRECTOR – The director of the Public Works Department of the City of Independence or their authorized representative.

DOMESTIC SEWAGE – The liquid and waterborne waste derived from the ordinary living processes, free from industrial wastes, and of such character to permit satisfactory disposal, without special treatment into the public sewer or by means of private sewage disposal system.

DOUBLE CHECK VALVE ASSEMBLY – An assembly composed of two single, independently acting, approved check valves, including tightly closing shut-off valves located at each end of the assembly and fitted with properly located test cocks.

DOUBLE CHECK DETECTOR CHECK VALVE ASSEMBLY – A line-sized approved double check valve assembly with a parallel meter and meter-sized approved double check valve assembly. The purpose of this assembly is to provide backflow protection for the distribution system and at the same time provide a metering of the fire system showing any system leakage or unauthorized use of water.

DRAINAGE FACILITIES – Pipes, ditches, detention basins, creeks, culvert bridges, etc., used singularly or in combination with each other for the purpose of conveying or storing storm water runoff.

DRAINAGE WASTE – Storm water, ground water, surface drainage, subsurface drainage, spring water, well overflow, roof drainage, or other like drainage other than sewage or industrial waste.

DWELLING UNIT – A facility designed for permanent or semi-permanent occupancy by one or more persons and provided with living, cooking, sleeping, and sanitary facilities.

EASEMENT – An interest in land owned by another that entitles the easement holder to a specific limited use of the land; however, ownership of the land does not change. Easements to the City shall be prepared on standard City easement forms granting to the City access and easement rights along the utility line or facility, and formalizing the terms and conditions of the easement. After review and approval by the City, easements shall be recorded in the County records by the City and the costs shall be passed on to the applicant.

EASEMENT, PUBLIC PIPELINE – The space identified within the easement document that is in, upon, above, along, across, over or under the publicly owned and maintained storm, sanitary, or water facility.

EASEMENT, PUBLIC UTILITY – The space in, upon, above, along, across, over or under the easement as identified within the easement document. By way of general description, public utility easements are typically created along the border(s) of a tax lot or frontage along public right-of-way and are intended for the use of private utility companies and other authorized users to operate, place, relocate and maintain facilities in accordance with city requirements and standards.

ENGINEER – The engineer, including the City's engineer, licensed by the State of Oregon as a Professional Engineer under whose direction plans, profiles, and details for the work are prepared and submitted to the City for review and approval, or who is in charge of and responsible for construction management of the improvement.

EPPDM PLANNING AND DESIGN MANUAL – Erosion Prevention Planning and Design Manual developed in partnership between Clean Water Services of Washington County, Water Environment Services of Clackamas County, City of West Linn, ODOT, and Harza Engineering, 2000 or latest edition.

EXPANSION JOINT – A joint to control cracking in the concrete surface structure and filled with preformed expansion joint filler or approved joint seal material.

FIELD ORDER – Written order to Contractor, approved by applicant or City, changing work but not affecting contract price or time.

FINAL COMPLETION – Date when project correction list is completed; a 20% maintenance assurance is submitted in accordance with contract documents, as modified by change orders agreed to by parties, or as specified in "Project Closeout" and the City Engineer receives confirmation that all easements and legal documents have been recorded with the County Recorder.

FIRE CHIEF – The chief officer of the local fire department or fire district serving the jurisdiction, or his/her authorized representative (OFC 202).

FIRE CODE OFFICIAL – The fire chief or other designated authority charged with administration and enforcement of the Oregon Fire Code, or his/her authorized representative (OFC 202).

FIRE HYDRANT ASSEMBLY – The fire hydrant and attached auxiliary valve.

FIRE LANE – A fire apparatus access road as defined in the Oregon Fire Code, including turnarounds where required (OFC 202).

FIRE PROTECTION SERVICE – A metered connection to the public water main intended only for the extinguishment of fires and the flushing necessary for its proper maintenance.

FIRST PARTY – Applicant or duly authorized representative.

FRENCH DRAIN OR LEACH LINE – A covered underground excavated trench filled with washed gravel that surrounds a perforated delivery pipe used to receive storm water wherein the sides and bottom of the trench are porous, permitting the storm water to seep into the ground.

GRADE – The degree of inclination of a road or slope.

GROUT – Thin, fast-setting, high-strength, non-shrink mortar used to fill cracks and joints in masonry.

HYDRANT LEAD – The water line connecting the fire hydrant to the auxiliary valve on the City distribution main.

IMPERVIOUS AREAS – Those hard surface areas, including existing gravel surfaces, located upon real property which either prevent or retard saturation of water into the land surface and cause water to run off the land surface in greater quantities or at an increased rate of flow from that present under natural conditions preexisting to development.

INCLEMENT WEATHER – Weather conditions so extraordinary that previous climatic conditions in locality of work give no reasonable warning of them; shall be determined by Public Works Director.

INDICATED, SHOWN, ETC. – "Indicated," "noted," "shown," "called for," or similar words shall mean indicated, noted, shown, or called for in the contract documents for the referred work.

INDUSTRIAL WASTE – Solid, liquid, or gaseous waste resulting from any industrial, manufacturing, trade, or business process or from development, recovery, or processing of natural resources.

INTERSECTION – Area jointed by two or more roads intersecting; for design purposes, intersection is not formed by naming two approaches of continuous street at curve or other point with different street names.

INTERCEPTOR (GREASE, OIL, AND SAND) – A device designed and installed so as to adjust, separate, and retain deleterious, hazardous, or undesirable matter from sewage, and to permit normal sewage or liquid wastes to discharge into the disposal terminal.

INTERCEPTOR SEWER – The primary public sanitary sewer which conveys waste water directly into the Waste Water Treatment Plant.

IRRIGATION SERVICE – A metered connection intended for seasonal use and delivering water which are not discharged to the sanitary sewer.

LANDSCAPE MAINTENANCE ASSURANCE – A two-year maintenance assurance for 100% of the cost to install all required landscaping in water quality/quantity facilities and vegetated corridors, plus 100% of the cost to maintain the landscaping in these areas for two years.

LARGE-DIAMETER PIPE – Pipe with inside diameter larger than 24 inches.

LATERAL SEWER – See Building Service Lateral.

LOCAL OR RESIDENTIAL STREET – A Street designated to provide vehicular access to abutting properties and discourage through traffic.

LONGITUDINAL JOINT – A joint which follows a course approximately parallel to the centerline of the roadway.

MAINTENANCE ASSURANCE BOND – Maintenance assurances required by the City of work performed to ensure post-construction quality and landscape survivability. May consist of both construction maintenance assurance and landscape maintenance assurance.

MAJOR PARTITION – A partition which includes the creation of a road or street.

MAJOR TREES – Trees within the right-of-way are those which have a caliper of 4" or larger. Street improvement plans will identify major trees by location, caliper, and species. Major tree species are those which contribute to the landscape character of the area to include: Douglas fir, Cedar, Redwood, Sequoia, Oak, Ash, Birch, Walnut, and Maple. The identification of major trees should distinguish species generally suitably for retention adjacent to streets and those species with growth habits that create nuisances, unusual maintenance problems, or hazards to the public. Major trees exist in clusters, groves or rows within the right-of-way.

MANUFACTURER'S NAME – Any manufacturer's name, specification, catalog, number or type used herein is specified by make and order to establish the standard requirements of the

City. Other equivalent makes will be considered for approval, providing they are comparable with this established standard.

MINOR PARTITION – A partition which does not include the creation of a road or a street.

MORTAR – Plastic building material of cement or lime, sand, and water that hardens in place and is used in masonry or plastering.

MULTIPLE FAMILY DWELLING – A building or portion designed thereof for occupancy by two or more families, living independently of each other.

NATURAL GRADE – The grade of the land in an undisturbed state.

NOTICE TO PROCEED – Written notice given by designated authority to Contractor fixing date when Contractor shall begin to perform the obligations under contract documents.

O&M PLAN – Operation and maintenance plan designed for public facilities and prepared by the design engineer, manufacturer, and/or Contractor.

ON-SITE DETENTION – The storage of excess runoff on the development site prior to its entry into a public storm drain system and gradual release of the stored runoff after the peak of the runoff has passed.

OR EQUAL – "Or equal," "or approved equal," or similar words shall mean to possess same performance qualities and characteristics and fulfill utilitarian function without any decrease in quality, durability, or longevity and shall meet with approval of designated authority (no inference is intended that items must be identical in all respects if above conditions are satisfied).

OWNER – The owner of record of real property as shown on the latest tax rolls or deed records of the County and includes a person who furnishes evidence that he/she is purchasing a parcel of property under a written recorded land sale contract.

PARTITION – To divide an area or tract of land into two or three parcels within a calendar year when such area or tract of land exists as a unit or contiguous units of land under single ownership at the beginning of such year.

PAYMENT BOND – Form of security furnished by Contractor and their surety guaranteeing payment of all labor, material, equipment, and all other obligations arising from work.

PEAK RUNOFF – The maximum water runoff rate (CFS) determined for the design storm.

PERFORMANCE BOND – Security furnished by applicant, or such other party acceptable to the City, and their surety guaranteeing complete and faithful performance of all obligations and conditions placed on Contractor by contract.

PLANNING COMMISSION – Empowered to review and take action on land-use applications; decisions are usually binding but may be appealed to City Council. Makes recommendations to City Council regarding City's comprehensive plan, facilities plan, and planning and zoning ordinances.

PLANS – Construction plans, including system plans, horizontal plans, and profiles, cross sections, detailed drawings, etc., or reproductions thereof, approved or to be approved by the Public Works Director, which shows the location, character, dimensions, and details for the work to be done, in which constitute a supplement to these standards.

POTABLE WATER – Water which is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the health authority having jurisdiction.

PREDEVELOPED – Considered as the natural, unimproved and unaltered state of the land.

PRIVATE COLLECTION SYSTEM – A privately owned and maintained sewer system installed to serve multi-unit structures on single ownership properties, which cannot legally be further divided.

PRIVATE STORM DRAIN – Any storm sewer located on private property serving more than one structure on the same premises or parking lot catch basins.

PRODUCT DATA – Complete catalog data for manufactured items of equipment and all component parts, including specific performance data, material description and source, rating, capacity, working pressure, material gauge thickness, brand name, catalog numbers, and other necessary information.

PROJECT CORRECTION LIST – Final project inspection to repair checklist, or punch list, compiled after construction of total project is complete, and after all testing is satisfactorily finished.

PROPOSAL – Offer for work made out and submitted on prescribed proposal form and properly signed and guaranteed by bidder.

PUBLIC ROAD – Road dedicated for use by public and maintained by the public.

PUBLIC SANITARY SEWER – Any sewer located in a public right-of-way or easement and operated and maintained by the City for carrying sewage and industrial wastes.

PUBLIC STORM DRAIN – Any storm sewer located in a public right-of-way or easement and operated and maintained by the City.

PUBLIC WORKS DIRECTOR, CITY ENGINEER – Professional Engineer registered in the State of Oregon, designated by the City Manager to carry through with planning, designing, and project supervision of public facilities that will be accepted and owned by the City. Person designated to have the authority to review and approve all public works design and construction project.

PUBLIC WORKS FACILITY – Any facility constructed in public right-of-way or public easement that is either immediately or eventually to be taken over by City for maintenance and operation; includes but is not limited to streets, sidewalks, curbs, parking lots, driveways, drainage facilities, water system works, and sanitary sewer systems.

PUNCH LIST – See Project Correction List.

RECORD DRAWINGS – Plans signed and dated by the project Engineer indicating that the plans have been reviewed and revised, if necessary, to accurately show all as-constructed details and changes.

RELEASE RATE – The controlled rate of release of drainage, storm, and runoff water from property, storage pond, runoff detention pond, or other facility during and following a storm event.

REPRESENTATIVE – Public Works Director or authorized representative.

RESERVE STRIP – A 1-foot-wide section adjacent to or at terminus of right-of-way, to be recorded as a plat restriction with access controlled by the Public Works Director.

RESIDENTIAL USER – The owner, lessee, or occupant of a single dwelling unit in one structure.

RIGHT OF WAY – All land or interest therein which by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the use of the public for sidewalk, utility, and or roadway purposes.

ROADWAY – All of that portion of the right-of-way used or to be used for vehicle movement which exists between the curbs or proposed curb lines.

SEDIMENTATION – Disposition of erosional debris, soil sediment transported by water from a higher elevation to an area of lower gradient where the sediments are deposited as a result of slack water.

SENSITIVE AREA – Areas sensitive to environmental degradation, such as existing or created wetlands; rivers, streams, and springs with year-round or intermittent flow; and impoundments (natural lakes and ponds). Sensitive areas also include any locally designated Goal 5 resource.

SEWER MAIN – A public sewer that has been or is being constructed to accommodate more than one sewer lateral or to which a building sewer connects or may connect (Normally not less than eight inches in diameter)

SEWAGE – A combination of water-carried wastes from residences, business buildings, institutions, and industrial establishments, except industrial wastes.

SHOP DRAWINGS – Diagrams, drawings, illustrations, brochures, schedules, and all other data submittals required by Contractor and furnished by Contractor illustrating fabrication, installation, dimensions, and other aspects of work.

SIDWALK – A walk or path along the side of a road for pedestrians. A right-of-way deeded, dedicated, and designated for the use of non-motorized vehicles and pedestrians.

SILT – Fine textured soil particles including clay and sand as differentiated from coarse particles of sand and gravel.

SILTATION – Deposition of (silt) waterborne sediments.

SINGLE FAMILY DWELLING – Any residential building designed to house one family.

SPECIFICATIONS – Directions, requirements, explanations, terms, and provisions in these standards, supplemented by such special conditions as may be necessary pertaining to various features of work to be done, manner and method of performance, and manner and method of measurement and payment; specifications include directions, requirements, and explanations that appear in plans.

STANDARD DRAWINGS – The drawings of structures or devices commonly used on public improvements and referred to on construction plans.

STANDARD SPECIFICATIONS – Codes, rules, and regulations set forth in City of Independence "Standard Specifications for Public Works Construction".

STANDARDS – Specifications in the "Standard Specifications for Public Works Construction" adopted for use in City of Independence.

STEEL PLATE – A-36 steel meeting AASHTO H-20 loading specifications.

STREETS AND ROADS – Any public highway, road, street, avenue, alleyway, easement or right-of-way used or to be used for vehicle movement.

STRUCTURES – Those structures designated on the standard plans such as catch basins, manholes, etc.

SUBCONTRACTOR – Any individual, firm, or corporation having contract with a general contractor or with any other subcontractor for performance of part of work.

SUBDIVISION – To divide an area or tract of land into four or more lots within a calendar year when such area or tract of land existed as a unit or contiguous units of land under a single ownership at the beginning of such year.

SUBSTANTIAL COMPLETION – When the Public Works Department authorized representative determines that all of the requirements are met for the construction, testing, and approval of the following: public water systems, public sewer system, public storm systems, private storm water quality/quantity systems, public roadway paving, public roadway striping and signage, public roadway lighting activation, ADA facilities, conditioned offsite improvements, pedestrian and bicycle improvements, transit improvements, park improvements, recording of all public easements, right-of-way dedications, plats, partitions, and park related land dedications, and all fire, life, and safety issues meet code.

SUBSTANTIAL PROGRESS – In the opinion of the City Engineer, construction work is proceeding at a rate close to that of the submitted construction timetable.

SUPER ELEVATION – The vertical distance between the heights of the inner and outer edges of a highway pavement.

SURVEY CUT SHEETS – Sheets of tabulated survey data, indicating stationing, structures, fittings, angle points, beginning of curve, points on curve, end of curves, staking offset, various elevations and offset utility cuts.

TRANSVERSE JOINT – A joint which follows a course approximately perpendicular to the centerline of the roadway.

TRAVELED WAY – That portion of the roadway for the movement of vehicles, exclusive of shoulder and auxiliary lanes.

TURNAROUND AREA – An area of sufficient size and configuration that a motor vehicle may maneuver so as to travel in the opposite direction.

TRUNK SEWER – (Interceptor) A sanitary sewer which is primarily intended to receive waste water from a collector sewer, another trunk sewer, an existing major discharger of raw or inadequately treated wastewater, or water pollution control facility.

UNIFORM PLUMBING CODE – The Uniform Plumbing Code adopted by the current edition of the International Association of Plumbing and Mechanical Officials, as revised by the State of Oregon, called the "Oregon State Plumbing Specialty Code".

WASTE WATER – The total fluid flow in the sanitary sewerage system which includes industrial waste sewage, or any other waste including that which may be combined with any ground water, surface water, or storm water that may be discharged into the sanitary sewerage system.

WATER DISTRIBUTION SYSTEM – Water distribution pipelines, pumping stations, valves, and ancillary equipment used to transmit water from the supply source to the service line.

WATER MAIN – The water-supply pipes for public or community use.

WATER SERVICE LINE – The pipe connection from the City water main to the users' water meter, hydrant, back flow prevention device, or fire sprinkler double check valve.

WETLANDS – Those lands adjacent to watercourses or isolated therefrom which may normally or periodically be inundated by the waters from the watercourse or the drainage waters from the drainage basin in which it is located. These include swamps, bogs, sinks, marshes and lakes, all of which are considered to be part of the watercourse and drainage system of the City and shall include the headwater areas where the watercourse first surfaces. They may be, but are not necessarily, characterized by special vegetation or soils such as peat, muck, and mud.

WET-SEASON – For the purpose of monitoring ground water elevations, the “wet-season” is defined as November 1 through April 30.

WORK – Furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to successfully complete project or part of project and carrying out of all duties and obligations imposed by contract.

WRITTEN NOTICE – Written communication delivered in person to individual or to member of firm or to officer of corporation for whom it is intended. If delivered or sent by mail to last business address known to one who gave notice, it shall be duty of each party to advise other parties to contract of any change in business address until contract is complete.

1.13 LOCATION OF UTILITIES WITHIN RIGHT-OF-WAY OR EASEMENT

A. The standard details indicate the general required location for each utility within the public right-of-way.

B. In general, new franchise utilities are to be installed within street frontage PUEs where such easements exist or are proposed in conjunction with the development or project (unless otherwise approved by the Public Works Director on a case-by-case basis).

C. General Separation Requirements. Installation of franchise or private utilities in a common trench with public water, sanitary sewer or storm drain mainlines is prohibited.

   1. Horizontal Separation. Unless otherwise approved by the Public Works Director and the City Engineer, a minimum of 5 feet of horizontal separation must be maintained between City utilities (ie. mainlines, as well as service laterals within the ROW or City easements) and private or franchise utilities except at crossings, as well as between fire service lines and public, private or franchise utilities. Separation between water service

lines or fire service lines and sanitary sewer service lines located within a public right-of-way or within a City utility easement shall be per DEQ separation requirements.

2. Vertical Separation. Unless otherwise required by the Public Works Director and the City Engineer, a minimum of 6-inches of vertical separation must be maintained between City utilities (ie. mainlines, as well as service laterals within the ROW or City easements) and private or franchise utilities at crossings, as well as between fire service lines and public, private or franchise utilities. Greater vertical separation is required between sanitary sewer pipelines & potable pipelines, as summarized elsewhere in these standards.

D. Street Crossing. All franchise utility street crossings shall be installed at right angles to the street centerline, and all crossings of water, sewer or storm mainlines or service lines/laterals shall be as close to perpendicular as feasible. Utility crossings shall be limited to crossings near intersections. Midblock and individual crossings to serve properties are prohibited.

E. Franchise Utility Limitations in City Easements. Franchise utilities or private utilities shall not be placed in City utility (ie. water, sewer or storm) easements, unless specifically directed in writing to do so by the Public Works Director, subject to separation requirements in excess of minimums as dictated by Public Works Director.

F. Utility Plans Required. Franchise utility plans shall be submitted to Public Works Director and the City Engineer for review prior to final plan approval.

G. Plowing In of Utilities Prohibited in ROW or City Easements. Use of cable/conduit plowing for installation of franchise or private utilities within public right-of-way or City utility easements is prohibited.

H. Large Utility Main Lines. Utility service companies proposing to install major utility systems larger than typically required to serve local users and which cannot conveniently be relocated in the future will be required to prepare detailed drawings showing how the proposed system can be installed within the public utility easement without conflicting with existing or proposed City utilities. Drawing requirements may include but not be limited to plan and profile of proposed systems based on a detailed topographic survey.

I. Modifications Required Due to Changes on Private Property. If changes are made to private property which requires modifications to and/or relocation of City utilities/infrastructure, such modifications and/or relocation shall be completed by the property owner or Developer at their sole expense, as directed by the City. Such modifications and/or relocation shall comply with current City standards, and shall be reviewed and approved in accordance with these standards.

1.14 CONTROL OF PUBLIC WORKS PROJECTS

A. All public system improvements and public works facilities, or improvements or facilities to become public, shall be designed by a Professional Engineer registered in the State of Oregon. All public system improvements and public works facilities shall be designed and constructed in accordance with all applicable rules and regulations of the City and any City interpretations of those rules and regulations, including applicable technical guidance manuals, and in accordance with all applicable federal, state, and local statutes and rules.

B. Approval of the plans must be made by the City Engineer before construction is permitted. An authorized representative of the City will be available for construction observation during construction of the project.

C. At the completion of construction, the design engineer shall submit a completion certificate to the City stating that all work has been completed in accordance with the approved project plans and specifications, or approved modifications to the plans.

D. All surveys for public works facilities shall be performed under the direction of a Professional Land Surveyor registered in the State of Oregon. All elevations on design plans and record drawings shall be based on NAVD 88 Datum. A list of acceptable benchmarks is available at the Clackamas County Surveyor's Office
E. Materials and workmanship shall meet or exceed the adopted standards and at all times shall be subject to the approval of the City Engineer.
F. On completion of projects to become public works, the Applicant or their Design Engineer shall submit one complete set of reproducible record drawings in accordance with Subsection 1.17.17, “Project Closeout" to the City Engineer for future reference. The drawings shall show any deviations from the original construction drawings and shall include sufficient information to accurately locate water, sanitary sewer, and storm sewer service extensions. No bond will be released until the City Engineer receives an acceptable set of reproducible record drawings from the design engineer, with his or her stamp of certification.

Before the City accepts a public works project for operation and maintenance, a one-year guarantee on all materials and workmanship incorporated in the project shall be provided to the City on one of the acceptable forms described in Subsection 1.17.18, “Maintenance Assurance and Warranty".

1.15 DEVELOPMENT PROCESS REQUIREMENTS

1.15.1 Pre-Application Conference

The City of Independence will hold a pre-application conference with the Applicant (owner/developer), unless otherwise waived by the Public Works Director, before formal application for public works permits and review of site design and construction plans. The pre-application process allows the applicant and the City to discuss the proposed project and the standards and regulations that will apply while the project is still in a preliminary stage. Any specific development standards, regulations, or problem areas can be discussed before the applicant makes a substantial investment in the project or proceeds with a formal application unaware of the issues.

1.15.2 Plan Check and Permits

A. **General:**
These Standards shall apply to all improvements within existing and proposed public right-of-way and City/public utility easements, to all improvements to be maintained by the City, and to all improvements for which the Development Code requires approval by the City, or which must be designed to meet the provisions of the Public Works Design Standards (PWDS). The provisions of these Standards are binding on contractors and developers in the performance of any work covered under these standards. In the case of conflicts between the text of these construction standards and the standard details in the PWDS, or between the provisions of these construction standards and the PWDS, the more stringent as determined by the Public Works Director shall apply. All other utility improvements, including telephone, electrical power, gas and cable TV shall meet the current standards of the appropriate agency as well as City standards. Traffic Control Devices shall meet the standards of the current Manual on Uniform Traffic Control Devices, including Oregon amendments. All other work not covered by the above standards shall conform to the Oregon Standard Specifications for Construction (OSSC/ODOT/APWA), most recent edition.

B. **Plan Check:**
Design reviews are required, and review approvals issued on all construction projects within public right-of-way, easements, or property which will eventually be maintained and

operated by the City of Independence. Projects that require plan checks include all private storm drainage, sanitary sewer, and water systems that will be connected to or that will discharge into a system under the jurisdictional control of the City of Independence.

C. **Public Works Permit**:
No work shall be performed, nor materials stored, nor encroachment made on or within a Right-of-Way, Public Easement, or Public Utility Easement without first acquiring a permit from the City's Public Works Department, except as provided by City Ordinance. Projects requiring Public Works Permits shall include, but not necessarily be limited to, improvements or upgrades to publicly owned and maintained streets, sidewalks, curbs, driveway approaches, water systems, sanitary sewer systems, and storm drainage systems. Any permits required by federal, state, and local governments shall be obtained by the person proposing the improvements.

D. **Utility Construction Permit**:
The construction, repair, maintenance, or replacement of all other utilities located within a public right-of-way or public easement, including but not limited to, power, telephone, gas, and cable television shall be required to submit for plan check and obtain a Utility Construction Permit.

E. **Right of Way Permit**: For all other work done within the Right-of-Way that blocks, partially blocks, hinders or impedes the flow of traffic, cyclists, or pedestrians, a Right of Way Permit shall be required.

F. **Other Agency Permit**:

Any reviews and/or permits required by the County, ODOT, DEQ, DSL, railroads (where applicable), or any other governmental agency having jurisdiction are the sole responsibility of the design engineer and/or the development team, including payment for any associated permit fees, bonds or insurance. The City does not coordinate with (or submit construction drawings to) the County, ODOT or the railroads on the developer's behalf (for public works related permits). The development team is responsible to comply with any requirements imposed by the County, ODOT, DEQ, DSL, railroads (where applicable), or any other governmental agency having jurisdiction. Where County, ODOT, DEQ, DSL, railroads (where applicable), or any other governmental agency having jurisdiction requirements conflict with City requirements, the more stringent shall apply.

1.15.3 Plan Check Requirements

A copy of the Public Works Department design requirements**,** which is available for download from the City website, will be used as a guide during the review of all proposed new, or improvements to, public works facilities. The following requirements shall be met before the City Engineer completes a plan check:

A. Satisfy all requirements of the Independence Municipal Code and other ordinances and regulations pertaining to construction in the City of Independence.
B. Submit a completed Public Works Construction Permit and engineer's estimate.
C. Submit four copies of stamped and signed detailed plans and specifications produced by a Professional Engineer registered in the State of Oregon. Incorporated within the construction plans and specifications shall be applicable franchise utility installation plans, stamped and signed and prepared by the proper authority. Copies will be routed for review to other divisions within the City and the Polk County Fire District for a comprehensive plan review.
D. For projects which include street construction, re-construction or expansion, submit one set of the Geotechnical Report and one set of the stamped and signed street design calculations in conformance with Chapter 2.

E. Submit one set of a stamped and signed storm water design report in conformance with Chapter 3
F. Submit one set of stamped and signed design calculations for the water system design, wastewater system design, or storm drainage system design where applicable or as required.
G. Submit one set of stamped and signed soil-bearing tests, as required by the City for pavement design, to verify street section designs and alternatives. Soil testing to ascertain the strength of the soil is required for all roads to analyze and design the road structural section. Soil tests are needed on samples of the subgrade material that is expected to be within 3 feet of the planned subgrade elevation. Samples are needed for each 1,000 feet of roadway and for each visually observed soil type. Soil tests are required for a minimum of two locations.
H. A plan check fee must be paid before a plan review will be started. The amount of the fee will be established by resolution of the City Council.
I. Plans deemed incomplete by the City Engineer may be returned without a full plan review being completed. An explanation will be provided by the City indicating sections of the plans deemed incomplete. Once all items are addressed, plans may be resubmitted for review.
J. Plans shall include all necessary current City details and City Construction Note Sheet.

1.15.4 Plan Sheet Requirements

Sheet Size

All construction plans shall be clearly and legibly drawn on bond sheets measuring 22 x 34-inches. Sheets shall have at least 1-1/2 inches of clear margin on the left edge and a 1/2-inch margin on all other edges.

Sets of Plans

When plans are prepared for developer financed projects, the following scale of drawings is suggested.

Plan/Scale	Horizontal	Vertical
Street*	1" = 20'	1" = 2'
Sewer	1" = 20’ or 40'	1" = 4'
Storm	1" = 20’ or 40'	1" = 4'
Water**	1" = 20' or 40'	1" = 4'

*Subdivision street plans, when combined with other proposed facilities listed above, may be drawn at 1" = 40' scale.

**When a scale is used which is smaller than 1" = 20' (i.e., 1" = 40') intersection details showing fittings and valving shall be provided at a larger scale.

Architectural scales (i.e., 1/4" = 1'-0") are not permitted.

Required Sheets

Construction plan submittals shall contain the following minimum sheets: title sheet, general notes and legend sheet, composite utility sheet, plan and profile sheets, detail sheets.

Title Sheet

All subdivision projects and multiple street improvement projects shall have a title sheet as the first page of the construction plans. This sheet shall contain the following minimum information.

A. Site plans of the entire project with street right-of-way and/or subdivision layout at a 1" = 100' scale. A 1" = 200' scale may be used if project size is too large. The site plan shall also include all adjacent public facilities within 100' of the proposed project.
B. Vicinity map at a 1" = 1000' scale, or greater.
C. Index of sheets.

D. Temporary and/or permanent benchmarks used along with their descriptions, elevations of benchmark and datum.
E. Engineer's name, address and phone number & seal.
F. Surveyor's name, address and phone number.
G. Developers/owner's name, address and phone number for public improvements with private financing.
H. Provide contact phone number for all affected utility companies (Pacific Power, NW Natural Gas, MINET, Charter-Spectrum, and Lumen-Century Link).
I. Show tax lot numbers for subdivision parcels and addresses of existing properties.

General Notes & Legend Sheets

The general notes and legend sheet shall contain the standard City notes and any other construction notes pertinent to project. A legend for existing and proposed facilities shall be present and proposed facilities shall be bold.

Composite Utility Sheet

The composite utility sheet shall show all properties served by proposed sewer, water and storm facilities, in addition to the proposed facility and all easements. This plan sheet shall be used to identify and analyze the extension of the proposed facilities. The topographic plan shall show all upstream and tributary areas within no less than 200 feet of the proposed development. The plan shall include existing contours at one (1) foot intervals, or as approved by the City. Include location of existing structures and public and private utilities.

Plan Sheet

The plan view of each sheet shall be drawn at the appropriate scale showing the following minimum information:

A. Adjacent Street curbs, property lines, right-of-way lines, utility easements referenced to property lines, street centerlines and intersections. Show property corner and curb elevations to determine water service level, serviceability of lot/property and sanitary sewer, points of disposal for building storm drains, and how new curbs will join to existing curbs.
B. Location of all underground utilities within 100 ft. of the project, existing power/telephone poles and guy anchors, valves, manholes, catch basins, fire hydrants, meter boxes and vaults, signs, etc.
C. Location of all water courses, railroad crossings, culverts, bridges, large water transmission pipes and gravity sewers and/or storm drains within 200 feet of proposed gravity sewer and storm drain extensions if they affect the design of the project. All water courses shall show the 100-year flood plain as indicated on the U S. Army Corps of Engineers and Federal Emergency Management Agency (FEMA) flood plain maps.
D. On sewer and storm drain plans, each manhole, catch basin, and clean-out shall be numbered and stationed. Stationing shall tie to street centerline. Each line shall be stationed continuously and go from left to right on the plan sheet. Each separate line shall be separately designated (e.g., sewer line "A", storm line "A", etc.). Existing manholes and catch basins shall be labeled with the City numbering system.
E. On street plans, horizontal stationing shall show points of tangent and curvature for centerline curve data shall show tangent length, radius distance, centerline curve length, and delta angle. Centerline intersection stationing, in both directions, shall be shown.
F. Where streets are being widened, edge of pavement elevations shall be shown to determine pavement cross-slope to new curb or pavement edge.
G. On water plans, all fittings shall be shown and identified by type (i.e., MJ x MJ, FLG X MJ, FLG X FLG, etc.). Fire hydrants and intersection details for valves and fittings are required when

scale of plans is smaller than 1" = 20' (i.e., 1" - 40'). All valves, fittings and pipe conditions shall be indicated.

H. On erosion control plans, the location of silt fences, inlet barriers, gravel entry ways, temporary ditches and detention ponds and surface preparation shall be shown. The plan shall show the entire development. Details of erosion control devices can be shown on this sheet. All erosion control plans shall meet DEQ requirements.

Profile Sheet

Profiles for construction plans shall be the same horizontal scale as the plan sheet. Where profiles are drawn on the same sheet as the plan view, the profile shall be immediately below the plan view. Stationing shall be continuously from left to right with lower stations to the left. The following minimum information shall be shown:

A. For sewers and storm drains, show locations of manholes, catch basins, and clean outs with each numbered and stationed. Existing manholes and catch basins shall be labeled with the City numbering system.
B. Existing and proposed profile at centerline of utility or street.
C. Proposed profile grade, as appropriate, for all sewers, storm drains and water lines giving pipe size, length between structures, slope, backfill type, surface restoration type, and pipe materials, sewer inverts and direction, rim elevations, etc.
D. Existing and proposed underground utility that crosses the alignment of the proposed facility. Separation shall be shown in inches on profile.
E. Beginning of all vertical curves, points of vertical intersection, end of vertical curve, low/high point of sag/crest curve and length of vertical curve. Profiles of existing centerline grade shall extend a minimum of 250 feet beyond the end of the improvement.
F. Clearly show all potential utility conflicts with appropriate pipes, conduits, vaults, etc. that affect proposed design.

SPECIAL NOTE: The City of Independence record drawings are only to be used as an aid to the engineer. When a potential conflict may occur, the engineer shall field locate, or cause to be located, and verify the alignment, depth, and inverts of all existing facilities shown on the plans that will be crossed by the proposed facility.

Detail Sheets

Detailed drawings shall be included with all construction plans where City of Independence Standard drawings do not exist. When appropriate, due to required detail complexity, a separate detail sheet shall be drawn. When City standard drawing appurtenances or construction installations are to be used, a reference to the specific Standard Drawing number shall be made on the title sheet.

Supporting Information

The engineer shall submit sufficient supporting information to justify the proposed design. Such information shall include, but not be limited to, the following:

A. Design calculations.
B. Hydrology and hydraulic calculations with basin maps.
C. Alternate materials specifications including manufacturers' design application recommendations.
D. Plan support information to include as appropriate: Soils engineering report, Hydrology report, and Engineering geology report.

Plan Submittal

Construction plans for all privately financed public works facility improvements shall be submitted to the City. The Public Works Director will coordinate the plan review and approval of all construction plans which will include review for compliance with all Independence Design Standards, utility master plans, City Code and Ordinances.

All plan submittals shall include information required below along with all other information requested by the Public Works Director. This information shall include, but is not limited to, construction cost estimates, easement documents, right-of-way dedications, and executed agreements. All submittals will be reviewed for completeness and the engineer notified if required information is missing. Submittals should be made in a timely manner as lack of information to the City may impede the review process.

Street

The following minimum information shall be noted on the street record drawings:

A. Change in horizontal alignment, curve data and stationing of primary control points (e.g., PC, PI, PT, and PRC).
B. Vertical curve or grade changes; change in location of low point in sag vertical curve.
C. Change to approved thickness for street structural section components. Show station limits where changes in structural section have occurred.
D. Change to driveway locations or widths.
E. Other change(s) altering the approved plans, including but not limited to; curbs, sidewalks, sidewalk ramps and lighting.

Storm Drains

The following minimum information shall be noted on storm drain record drawings:

A. Station of wye or tee into main line. Tie each end of branch line to nearest property corner a right-of-way line, and distance back from the face of curb.
B. Show alignment changes, grade changes and changes in construction materials. If changed alignment results in station changes, a station equation shall be shown as appropriate at a manhole.
C. Other change(s) altering the approved plans, including but not limited to; catch basin location, manhole location, pipe size, dry well location, etc.

Sanitary Sewer

The following minimum information shall be noted on sanitary sewer record drawings:

A. Station of wye or tee into main line. Tie each end of service lateral to nearest property corner at right-of-way Line, and distance back from the face of curb.
B. Depth at the end of service lateral measured from existing ground to invert of pipe.
C. Length of service lateral measured from centerline of sewer main to end of pipe.
D. Show alignment changes, grade changes, pipe size changes and changes in construction materials. If changed alignment results in station changes, a station equation shall be shown as appropriate at a manhole.
E. Other change altering the approved plans.
F. Provide complete test results to the Public Works Director.
G. Type of pipe, backfill material and location.

Water Main

The following minimum information shall be noted on water main record drawings:

A. Station and/or property line/corner to valves (not at standard location), all fittings, blow-offs and dead-ended lines.
B. All changes from standard 30-inch depth cover. Limits shall be shown on all plans with annotated reason for change. Actual pipe elevation (top of pipe) will be taken at each fitting.
C. Show alignment changes, grade changes, pipe size changes and changes in construction materials, if changed alignment results in station changes. A station equation shall be shown as appropriate at a valve.
D. Provide manufacturer of all valves; identify types of fittings (i.e., MJ X MJ, FLG x MJ, etc.); provide information in the form of an inventory list on construction drawings.
E. Other change altering the approved plans.

F. Provide complete test results to the Public Works Director.

1.15.5 Plan Review

A. If all conditions of the plan check requirements as specified in Subsection 1.15.3, "Plan Check Requirements," are met, and no additional information is requested by the City's authorized representative, a plan review will be completed. The City Engineer will prepare a plan review redline comments list, to be sent to the appropriate permit applicant or responsible party. The list will indicate any deficiencies in the construction plans and specifications. The proper party shall then make the corrections and resubmit the plans and specifications.

B. Once the plans and specifications are approved for construction, the City's authorized representative shall issue a written notice of plan approval. The written notice of plan approval shall remain in effect for 1 year from the date of approval. If the applicant cannot proceed with the project within the 1 year limit, a 6 month extension can be applied for by submitting a written request to the Public Works Director. If no substantial progress has been made within the allotted time, no further plan approval extension will be granted, the plan review fee shall be forfeited to the City, and the plan approval will expire. Plans may be resubmitted, subject to payment of new plan review fees.

1.15.6 Record Drawings, Maps, and Plans Not Guaranteed

Record drawings, maps and plans are provided to the City by the Owner/Developer upon completion of development and/or improvement projects within the City. The City does not guarantee the accuracy of measurements, elevations, locations, or other information on such maps and plans. All information shall be independently verified by a registered engineer, as part of their due diligence, via survey, core drill and vacuum excavation (permit and inspection of repairs required), or other appropriate means prior to conducting any improvement or development.

1.15.7 Permit and Assurances

A. Before any public construction begins, a development agreement satisfactory to the City Attorney shall be executed by the applicant as a performance assurance for such construction. The development agreement is required for all work in existing public right of way. The development agreement is also required for public improvements on private property as a condition of the final plat review and approval process. The amount of the performance assurance for private development projects shall be 100% of the design engineer's estimate or highest written estimates by three contractors with their names and addresses, on public improvements and shall be conditional on the performance of all terms and conditions of the permit and these standards. The amount of the performance assurance for public projects administered by the City shall be 100% of the full contract price in accordance with ORS 279C.380. Additionally, a payment bond in the amount of 100% of the full contract price shall be submitted in accordance with ORS 279C.380 unless exempted by the Local Contract Review Board in accordance with ORS 279C.390.

B. When all requirements stipulated here are met and the construction plans are stamped and signed by the City Engineer, a Public Works Permit can be issued on payment of the Public Works Permit fee. The amount of the fee will be established by resolution of the City Council.

C. The Public Works Permit shall be valid for one (1) year from the date of issuance. If time elapses on the permit, the applicant can request in writing a permit extension from the Public Works Director or the City Engineer. If the request is approved, the permit holder then has six (6) months to begin construction on permitted projects and shall show

substantial progress during this permit extension, as determined by the City. If no substantial progress is made within the allotted time, no further permit extension will be granted, the permit will expire, and the permit fees will be forfeited to the City. Plans may be resubmitted, subject to payment of new fees. Resubmitted plans shall be reviewed to determine compliance with the Public Works Standards, including any newly approved codes and/or regulations. Payment of a public works permit fee for construction will be required before a permit for construction is issued.

1.15.8 Insurance Requirements

The City requires additional assurances from the applicant/contractor including, but not limited to, Certificates of Insurance, naming the City as an additional insured, from insurance companies or entities acceptable to the City and meeting the requirements in Subsection 1.15.9, "Qualifications of Insurance and Bonding Companies." The Certificate shall specify the name of the project and all of the parties who are Additional Insureds. The contractor shall be responsible for paying all deductibles, self-insured retentions and/or self-insurance included under these provisions. For City administered projects, a Certificate of Insurance shall be executed by the successful bidder and their insurance company prior to the execution of the contract by the applicant.

Primary Coverage - Insurance carried by the Contractor shall be the primary coverage and the City's insurance is excess and solely for damages or losses for which the City is responsible.

Comprehensive or Commercial General Liability - Contractor shall obtain at the Contractor's expense and maintain comprehensive commercial general liability insurance covering bodily injury and property damage. This insurance shall include personal injury coverage, contractual liability coverage for the indemnity provided under this contract, and products/completed operations liability. The coverage for commercial general liability for one claimant shall not be less than $1,000,000 for each occurrence and $2,000,000 for general aggregate. The coverage for automobile liability shall not be less than $2,000,000 combined single limit. The coverage for umbrella liability shall not be less than $1,000,000 for each occurrence and $2,000,000 for general aggregate. Workers compensation and employers' liability shall be per statute.

1.15.9 Qualifications of Insurance and Bonding Companies

A. **Minimum requirements:** All bonding and insurance companies providing insurance or bonds required by the City must meet certain minimum financial security requirements. These requirements conform to the rating published by A.M. Best & Co. and a current Bests Key Rating Guide-Property-Casualty. All companies providing bonds or insurance must meet the following requirements.

- Have a current Bests Rating not less than A-.
- Have a current Bests Financial Size Category not less than Class IX.
- Be authorized to conduct and transact insurance and surety contracts in the State of Oregon.
- Be a U.S. Treasury Circular 570 listed company, if providing payment or performance bonds.

Failure to meet minimum requirements: If the issuing company does not meet these minimal requirements, or for any other reason is unsatisfactory to the City, written notification will be made by the City to the Applicant, who must promptly obtain and submit to the City a new policy or bond issued by an insurer/surety acceptable to the City.

1.15.10 Indemnification

The applicant/contractor shall indemnify and hold harmless the City of Independence and its officers, agents, and employees; Independence City Council; City of Independence Urban Renewal Agency and its officers, agents, and employees; and Independence Urban Renewal Board from and against all claims, demands, penalties, damages, losses, expenses, including attorney's fees, and causes of action of any kind or character, including the cost of defense thereof, arising or alleged to have risen in favor of any person on account of personal injury, death, or damage to property arising out of or resulting from, or alleged to have risen out of or resulted from, in whole or in part, any act or omission of the applicant, the applicant's design engineer, the applicant's contractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

1.16 CONSTRUCTION PROCEDURAL REQUIREMENTS

1.16.1 General Procedure and Requirements

A. During the construction period, the City will maintain two sets of approved plans and specifications. The permit holder or contractor shall retain one set of approved, stamped, and signed plans and specifications at the construction site at all times. Any modification to the approved plans shall be first approved, stamped, and signed by the City Engineer prior to construction of the modification. Additional copies of approved plans may be provided to the contractor upon written request.

B. A pre-construction conference with the City's authorized representative and the applicant, contractor, design engineer, and other parties requested to attend or having an interest in the project will meet to discuss the project before any construction begins. The pre-construction conference will discuss the role of the City's inspection team and the team's relation to the contractor and applicant.

C. An inspection criteria checklist may be provided to the contractor outlining necessary inspections. The customary inspections are generally as follows:
   1. All underground utilities, including water, sanitary sewers, and storm sewers.
   2. All subgrade preparation, fill placement, base rock, and leveling rock.
   3. All concrete pours, such as driveways, sidewalks, curbs, catch basins, manholes, and cleanouts.
   4. Asphaltic or Portland cement concrete pavement.

D. The City's authorized representative shall at all times have access to the project and will make routine inspections. Should any inspection reveal that the construction of the improvements is not proceeding according to the approved plans and the specifications in this document, the Public Works Director may order all work stopped, all defective work removed, or both.

E. The contractor shall give the City's authorized representative a minimum of 24 hours' (one working day) advance notice before a required inspection. It is the responsibility of the permit holder or contractor to obtain inspections and approvals for all work installed.

F. Failure to give advance notice to the City's authorized representative for inspections, receive adequate inspections, or violation of other regulations, ordinances, resolutions, rules, and City codes as outlined in these standards can result in one or more of the following, as determined by the City:
   1. Stoppage of work until problem is resolved.
   2. Suspension of future inspections.
   3. Withholding certification of projects as complete, which is required to begin warranty period and eventual City acceptance for maintenance and operation.

4. Citation for violation of the Independence Code and its penalties and provisions.
5. Uncovering or removal of work not inspected.

1.16.2 Testing of Construction Work

A. The applicant shall be responsible for providing the name of a compaction testing firm that will be paid by the permit applicant and that will supply the City's authorized representative with the compaction tests needed to certify that the soils, aggregate, and surface materials meet the minimum requirements of these standards. The testing firm hired by the permit applicant shall be required to be under the direct supervision of a Professional Engineer registered in the State of Oregon whose area of expertise is geotechnical engineering.
B. The applicant shall also be responsible for providing the name of a materials testing firm that will be paid by the permit applicant and that will supply the City Engineer with the concrete-strength tests and other materials tests required to certify that the materials meet the minimum requirements of these standards. The testing firm hired by the permit applicant shall be required to be under the direct supervision of a Professional Engineer registered in the State of Oregon.
C. City reserves the right to direct testing firm on frequency of testing.

1.16.3 Right of Entry to Work

Representatives of the City and any federal, state, or local agencies having jurisdiction over the work shall have right of entry to any and all parts of the work at reasonable times. The contractor shall cooperate in all respects with such agencies and shall provide proper facilities for access and inspection.

1.16.4 Suspension of Work

The Public Works Director may suspend the work and give written notice to the applicant/contractor of such suspension when the contractor is using material that does not conform to the requirements of the contract documents or when the contractor is improperly performing the work, and neglects or refuses to replace or reconstruct such work. The suspension shall remain in effect until appropriate corrections are made. Review of the Public Works Director’s decision shall be made in a written request, by the City Manager within 48 hours of the initial suspension. Regardless of the decision, the City shall not incur pecuniary liability for an incorrect suspension of work, unless such suspension was a willfully malicious act of the City.

1.16.5 Protection of Existing Facilities

A. The approximate location of underground City water, sewer, and storm drainage facilities are available at the Public Works Department. The approximate locations of underground power, gas, telephone, and cable facilities are available from the serving utility companies. The location of existing facilities shall be shown on the construction drawings for public works projects.
B. Appropriate and timely notice shall be given to all public and private utility companies in advance of construction, for the purpose of protecting or relocating existing facilities. The exact location of underground facilities shall be verified in advance of public works construction, in cooperation with the public or private utilities involved.
C. When the contractor is physically locating underground utilities in roadways, the Portland cement concrete (PCC) or asphalt concrete (AC) roadway surfaces shall be cored and not square-cut.
D. All existing underground and surface facilities shall be protected from damage or degradation during construction of public works facilities.

E. Any existing facilities not specifically designated for alteration or removal that are damaged or degraded during construction shall be restored or replaced to an "in kind" or better condition at the contractor's expense.
F. Turf damaged during utility construction shall be replaced with sod in a timely manner acceptable to the City Engineer.

1.16.6 Surveying and Land Monuments

A. **NAVD 88 Datum**: All elevations on design plans and record drawings shall be based on NAVD 88 Datum. Each page of the plans and drawings shall state the benchmark datum information. Note that City of Independence control points are based on NGVD 29 datum and that necessary adjustments will need to be made by the applicant's surveyor to meet NAVD 88 requirements.
B. **Permanent Survey Markers:** Before beginning any construction activity, the applicant's engineer/surveyor shall adequately reference all permanent survey monuments, property corners, stakes, benchmarks on the subject site, or markers that may be subject to disturbance in the construction area or during the construction of any off-site improvements. It shall be the responsibility of the contractor to protect survey monuments throughout the construction process. The contractor shall not disturb permanent survey monuments without written consent from the County Surveyor.
C. **Disturbed, Destroyed, or Lost Monuments:** If any survey monument is disturbed, moved, relocated, or destroyed as a result of construction activity, the contractor shall, at contractor's cost, retain the services of a Professional Land Surveyor registered in the State of Oregon to restore the monument to its original condition and shall file all documentation required by Oregon law. A copy of the recorded documentation shall be submitted to the Public Works Director.

1.16.7 Railroad Crossings

A. Crossings of railroad rights-of-way shall be done in a manner that conforms to the requirements of ODOT Rail Division and the railroad having jurisdiction. If any bonds or certificates of insurance are required, they shall be furnished by the contractor or applicant to the railroad company concerned, with the City as an additionally named insured. Costs for railroad flagging shall be the responsibility of the applicant
B. Permits or easements for such crossings shall be obtained by the applicant. All the terms of such permits or easement shall be met by the applicant and contractor. In some locations, the railroad may require a casing pipe.

1.16.8 Criteria for Stream-Road Crossings

A. Stream crossings shall be avoided whenever possible, whether by roads, utilities, or other development. If streams must be crossed, impacts shall be minimized by preferring bridges to culverts, and by designing bridges and culverts to pass at least the 100-year flood and meet the Oregon Department of Fish and Wildlife (ODFW) Fish Passage Criteria, or latest edition.
B. Before any work may be performed in any stream, the method of operation and the schedule of such work shall be approved in writing by the Oregon Department of State Lands (DSL) and Oregon Department of Environmental Quality (DEQ). The timing of in-water work shall comply with the guidelines established by the ODFW. Mechanized equipment shall enter streams only when necessary and only within the immediate work area.
C. The contractor shall comply with the regulatory requirements of the DSL, DEQ, ODFW, U.S. Fish and Wildlife Department, U.S. Army Corps of Engineers, National Marine Fisheries Service, and any other state and federal agencies having jurisdiction.

1.17 CONSTRUCTION

1.17.1 Construction Commencement

A. The contractor shall not undertake nor instruct the subcontractor(s) to undertake any portion of the work without notifying the City Engineer 24 hours in advance of beginning work. At the time of this notice to the City, the applicant shall have submitted to the City a performance assurance, construction permit agreement, appropriate plan check and permit fee, certificate of insurance, any necessary off-site easements, and have been issued a public works permit.
B. Contractor shall conduct construction activities only during the hours of work guidelines established by the City.

1.17.2 Scheduling

A. **Sequence of Operations:** The contractor shall plan construction work and execute operations with a minimum of interference to the operation of existing City facilities and the traveling public. It may be necessary to do certain parts of the construction work outside normal working hours to avoid undesirable conditions, and it shall be the obligation of the contractor to make this change to the work schedule. Such scheduling, however, is subject to approval of the City Engineer, and does not relieve the contractor from making their work available for inspection.
B. **Progress of Construction:** Construction shall proceed in a systematic manner that will result in minimum inconvenience to the public. Contractor shall pothole and verify existing utilities and facilities prior to commencing proposed work. Erosion control measures shall be installed and inspected per, Subsection 1.17.3, “City Inspections” prior to commencing work. Construction staking for the work being performed shall be completed before the start of excavation. The contractor shall limit their operations to a small work area per crew. At no time shall the trenching equipment be farther than 100 feet ahead of the pipe-laying crews, unless advance written permission is given by the City Engineer. The trench shall be backfilled in conformance with Section 8, “Trench Excavation and Backfill Standards,” so that no section of trench is left open longer than necessary as determined by the City. Before the contractor stops construction for the day, trenches located in the right-of-way shall be completely backfilled, unless the trench is covered with secured steel plates.
C. **Steel Plates:** Where Steel Plates are used as a temporary road surface they shall comply with the following:
    - Steel Plates shall be A-36 steel meeting AASHTO H-20 loading specifications.
    - Steel Plates shall be centered over the cut. No more than ½ of the plate shall span a trench that has been completely backfilled, or no more that ⅓ of the plate shall span a trench that has not been completely backfilled.
    - Uneven pavement surfaces must first be leveled with cold mix before laying plates over trench.
    - Plates shall be secured to the roadway with a minimum of two ½-inch or larger steel pins driven a minimum of 6 inches below the surface and at least 18 inches from the edge of the road cut.
    - Cold patch shall be used to ramp up to the Steel Plate edges; minimum 6-inch ramp per ½-inch difference in grade change between road surface and Steel Plate.
    - Contractor is responsible for maintaining cold mix around Steel Plates.
    - Use of plates in travel lanes shall require contractor to place a 30-inch by 30-inch “STEEL PLATE AHEAD” warning sign for each affected travel direction.

- Plates shall not be left in the travel lane for longer than 5 working days unless approved in writing by the City Engineer.

D. **Connections:** Any connections to existing public utilities or newly constructed facilities proposed to be public utilities shall be made only with approval of the City Engineer. Connections shall be made only after all testing is completed on the new work and it is found to conform in all respects to the requirements of the plans and specifications, unless otherwise approved by the City Engineer. Prior to making connection(s) to existing facilities, contractor shall have all necessary pipes and fittings available and on-site.

E. **Cleanup:** Cleanup of all construction debris, excess excavation, and excess materials and complete restoration of all fences, mailboxes, ditches, culverts, signposts, and similar items shall be completed in conformance with Subsection 1.17.16, "Preservation, Restoration, and Cleanup."

1.17.3 City Inspection

A. The City Engineer shall inspect the project as necessary and shall check materials, equipment, and the construction of the project to determine whether the work is proceeding in accordance with the City's standards. The contractor shall notify the City Engineer at least 24 hours (one working day) to request City inspection. No such inspection, however, shall relieve the contractor of their duties under these standards.

B. The City Engineer shall have the authority to direct replacement of defective material and uncovering work not inspected as required. Material rejected by the City Engineer shall be removed from the job site by the contractor immediately after its rejection and shall not be used on the project.

C. Instructions given by the City Engineer shall be respected and executed by the contractor. The City Engineer, however, shall not have the power to waive the obligations of the contractor to furnish high-quality equipment, supplies, and materials, or to perform good work.

1.17.4 Change in Plans or Standards

The City Engineer shall have the right to make changes in the plans or in these standards to protect the public interest or the normal operations of the City. Such changes shall be made at the sole discretion of the City Engineer and may include, but are not limited to, the allowance of new or different materials for products that are equivalent to, or better than, the products specified in the plans or standards.

1.17.5 Interferences, Obstructions, and Abandoned Utilities

A. **Utility Notification:** The contractor shall comply with the rules and regulations of the Oregon Utility Notification Center: OAR 952-001-0010 through 952-001-0090 and ORS 757.993. At least 48 hours' notice shall be given to all utility offices that may be affected by the construction operation.

B. **General:** Various obstructions may be encountered during the course of the work. Maps and information regarding underground utilities shall be obtained from the utility owning and operating such utilities, but the location of such utilities is not guaranteed. If the services of any utility are interrupted because of the construction operation, the contractor shall notify the utility owner and the City Engineer immediately.

C. **Protection:** The contractor shall exercise all due care in protecting existing underground and surface facilities and property along the route of the improvement. This protection shall include, but not be limited to, trees, yards, fences, drainage lines, mailboxes, driveways, shrubs, and lawns. Any existing facilities not specifically designated for alteration or removal

that are damaged during construction shall be restored or replaced to an "in kind" or better condition, at the expense of the contractor.

D. **Access:** The contractor shall maintain access to all mailboxes; access to all property entrances shall be in conformance with Subsection 1.17.11, "Access for Police, Fire, and Postal Service."
E. **Abandoned Utilities:** All abandoned utilities shall be properly removed, grouted, or plugged at the discretion of the City Engineer.

1.17.6 Contaminated Soil

If during construction contaminated soil or with hazardous materials or chemicals are encountered, the Contractor shall follow the procedures specified in Subsection 1.18.2, "Contaminated Soils or Hazardous Materials."

1.17.7 Guarantee

A. The applicant/contractor shall furnish high-quality equipment, supplies, and materials and perform the work in accordance with these specifications. Any failure or omission by the City Engineer to condemn any defective equipment, supplies, materials, or work shall not be construed as an acceptance thereof nor release the contractor from their obligations.
B. On notification of any deficiency by the City Engineer, the contractor shall properly reconstruct or replace any defective equipment, supplies, materials, or work at their own cost any time on discovery of the defect during the period of construction and for the full guarantee period after acceptance of the work and shall indemnify the City from any claims resulting from the defect.
C. The applicant/contractor shall guarantee all materials and equipment furnished and work performed for a minimum period of two (2) years from the date of formal written acceptance by the City's authorized representative in conformance with Subsection 1.17.18, "Maintenance Assurance and Warranty."
D. The applicant/contractor shall further warrant and guarantee for a minimum period of two (2) year from the date of formal written acceptance of the system that the completed system is free from all defects due to faulty materials or workmanship. The applicant/contractor shall promptly make such corrections as may be necessary by reason of such defects, including the repair of any damage to other parts of the system resulting from such defects.
E. If the applicant/contractor, after notice, fails within 10 days to proceed to comply with the terms of this guarantee, the City may have the defects corrected, and the applicant and the applicant's surety shall be liable for all expenses incurred. However, in case of an emergency where, in the opinion of the Public Works Director, delay would cause serious loss or damage, repairs may be made without notice being given to the applicant/contractor and the applicant/contractor shall pay the cost thereof.

1.17.8 Substitution of Materials

Whenever any material, article, device, product, fixture, form, type of construction, or process is indicated or specified by patent or proprietary name, by name of manufacturer, or by catalog number, such specifications shall be for the purpose of establishing a standard of quality and facilitating the description of the material or process desired. Such specification is not to be construed as eliminating from competition other products of equal or better quality made by other manufacturers and that are fully suitable in design and shall be deemed to be followed by the words "or as approved" or "approved equal." The contractor may, in such cases, submit complete data to the Public Works Director for consideration of another material, type, or process that shall be substantially equal in every respect to the one indicated or specified.

Substitute materials shall not be used unless approved in writing by the City's authorized representative. See also Subsection 1.11, “Approval for Alternate Materials or Methods”.

1.17.9 Safety Requirements

A. The contractor shall at all times conduct work in such a manner as to comply with all Occupational Safety and Health Administration (OSHA) requirements, shall minimize the possibility of accident or injury of any workers or the general public, and shall conduct the work, maintain operations, and provide all reasonable safeguards so as to protect public and private property as well as to protect persons from injury.
B. If in the opinion of the City Engineer the contractor is in violation of the above safety practices, the City Engineer may issue and post a stop-work order if the contractor, after being informed of such violation, refuses to comply immediately. The City Engineer will also notify OSHA of such action.
C. The City Engineer’s role is not one of supervision or safety management, but of observation only, as specified in Subsection 1.17.10, “Traffic Maintenance and Safety.”

1.17.10 Traffic Maintenance and Safety

A. The contractor shall comply with all rules and regulations of City, county, or state authorities and applicable fire protection and law enforcement agencies regarding the closure of public streets or highways to public traffic. No public road shall be closed to the public except by express permission of the public agency responsible for the road.
B. The contractor shall conduct their operations to ensure the least possible obstruction to traffic and normal commercial pursuits. Traffic control in work zones shall conform to the *Manual on Uniform Traffic Control Devices* (MUTCD 2009, or latest edition), published by the Federal Highway Administration, U.S. Department of Transportation and as amended by the Oregon Supplement to the MUTCD.
C. The contractor shall be required to submit a traffic control plan to the appropriate jurisdiction for review and approval before beginning construction.
D. The contractor shall provide and be responsible at all times for flaggers, signs, and other devices not otherwise specified to be furnished by the applicant. The contractor shall erect and maintain all barricades, guards, lights, variable message boards, standard construction signs, warning signs, and detour signs as are necessary to warn and protect the public at all times from injury or damage as a result of work operations on highways, roads, streets, sidewalks, multi-use paths, or recreational trails affected by such operations.
E. If the applicant or contractor fails to immediately provide the necessary flaggers or to provide, erect, maintain, and remove barricades, guards, lights, variable message boards, standard construction signs, warning signs, and detour signs when so ordered, the Public Works Director shall be at liberty, without further notice to the contractor or applicant, to do so and to deduct all costs from the applicant’s/contractor’s performance assurance.
F. When traffic will pass over backfilled trenches before they are paved, the top of the trench shall be maintained with cold patch or hot patch, to be removed later, and shall allow normal vehicular movement to continue. Access driveways shall be provided where needed. Cleanup operations shall follow immediately behind backfilling. The work site shall be kept orderly at all times.
G. When working in the public right-of-way, the contractor shall maintain the construction area in the interest of public health, safety and welfare, including, without limitation, maintenance of proper steel plates, trench backfill, patching, signage and lighting. It is the City’s right, but not its obligation, to monitor contractor’s compliance with this subsection. Upon discovery of non-compliance, or upon notice by the City Engineer, the contractor shall take immediate corrective action. If the contractor is not on site, and if, in the sole judgment

of the City, conditions impose an immediate or eminent threat to public health, safety and welfare, the City has the right to perform emergency repairs or cause the repairs to be made, without notice and with all costs of such work being the responsibility of the contractor. Within sixty days of receipt of a detailed invoice for payment from the City, the contractor shall reimburse the City for costs incurred.

H. The City Engineer's role is not one of supervision or safety management, but of observation only. Nothing contained in this section or elsewhere in this document shall be interpreted to obligate the City to act in any situation, nor shift the applicant's responsibility for safety compliance to the City. No responsibility for the safety of the work or for construction means, methods, techniques, sequences, or procedures shall attach to the City by virtue of its action or inaction under this section.

1.17.11 Access for Police, Fire, and Postal Service

A. No full or partial closure of a street shall be made without first requesting and receiving approval from the City's authorized representative. Closure of public streets shall be in conformance with Subsection 1.17.10, "Traffic Maintenance and Safety." The contractor shall conduct operations so as to cause the least interference with emergency vehicle access.

B. The contractor shall comply with all requirements of the U.S. Postal Service with regard to the location of mailboxes that must be disturbed during construction. Mailboxes may be moved to temporary locations designated by the Postal Service. At the completion of work in each area, the contractor shall replace the mailboxes in their original location and in a condition satisfactory to the Postal Service.

1.17.12 Compliance with Applicable Laws

A. The contractor shall keep fully informed of all local ordinances, including those of Polk County Fire District and state and federal laws and regulations that in any manner affect the work specified here.

B. The contractor shall at all times comply with said ordinances, laws and regulations, and shall protect and indemnify the applicant and his/her officers and agents against any claim or liability arising from or based on the violation of any such laws, ordinances, or regulations.

C. All permits, licenses, and inspection fees necessary for prosecution and completion of the work shall be secured by the applicant/contractor.

1.17.13 Work in Public Rights-of-Way

A. Closure of public streets shall be in conformance with Subsection 1.17.10, "Traffic Maintenance and Safety," and Subsection 1.17.11, "Access for Police, Fire, and Postal Service." Construction operations and traffic control shall be in conformance with Subsection 1.17.10, "Traffic Maintenance and Safety."

B. The contractor shall use every reasonable precaution to safeguard the persons and property of the traveling public. It shall be the sole responsibility of the contractor to furnish, place, and maintain barricades, barriers, lights, flares, danger signals, signs, and security guards as necessary to protect the persons and property of the traveling public. All barricades and obstructions shall be protected at night by signal lights that shall be suitably distributed and kept burning from sunset to sunrise.

C. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage, or as the result of being exposed or unsupported, the contractor shall promptly notify the proper authority, cooperate with said authority in restoring the service as promptly as possible, and bear all costs of providing temporary service measures and repairs.

In no case shall interruption of any water or utility services be allowed to exist outside working hours, unless prior approval by the City Engineer is received.

D. Work site cleanup shall be in conformance with Subsection 1.17.16, "Preservation, Restoration, and Cleanup."

1.17.14 Easements

The minimum utility and drainage easements for residential subdivisions shall be as follows:

A. Public utility easement along all front lot lines, as shown on approved plans, shall be 8 feet wide.
B. A 20-foot-wide easement with an all-weather surface for maintenance access, as shown on approved plans. Lateral access shall not be greater than 800 feet.
C. Public sanitary, storm sewer, and water lines on private property shall be centered in a permanent easement granted to the City. Minimum width of a public pipeline easement shall be 15 feet. Easement width shall vary with depth of pipe installation. For pipe diameter greater than 36 inches or depth of bury greater than 15 feet, easement width will be determined by City Engineer. Such easements, when directed by the City, shall be accompanied by temporary easements granted to the City of adequate width to allow construction of water, storm, and sanitary sewers. The applicant's surveyor shall provide the City with documents in an approved format necessary to grant easements. The width of combination easements will be evaluated at the site development permit stage, but in no case shall they be less than 15 feet wide. When easements greater than 15 feet in width are created, the City will consider placement of parallel utilities if installed a minimum of 7.5 feet from edge of pipe.

    Easement Width (Single Pipe) = Pipe Depth x 2
    Easement Width (Double Pipe) = Pipe Depth x 2 + 7.5 feet

D. No permanent structures shall be allowed within an easement area.
E. Certain types of wooden fences, chain link fences, or other similar structures acceptable to the City Engineer may be allowed to be installed across and/or within easements.

1.17.15 Sanitation

Contractors shall provide and maintain adequate sanitary/sanitation facilities for employees.

1.17.16 Preservation, Restoration, and Cleanup

Site Restoration and Cleanup

A. The contractor shall keep the premises clean and orderly at all times during the construction period and leave the project free of rubbish or excess materials of any kind on completing the work. The contractor shall immediately replace mailboxes and signposts disturbed by construction activities.
B. During construction, the contractor shall stockpile the excavated trench materials so as to do the least damage to adjacent lawns, grassed areas, gardens, shrubbery, trees, or fences, regardless of the ownership of these areas. These surfaces shall be left in a condition equivalent to their original condition or better and free from all rocks, gravel, boulders, or other foreign material.
C. If damaged or altered during construction, existing trenches, drainage ditches, and culverts shall be regraded, and original drainage tiles and sewer laterals shall be repaired expeditiously. Within 500 feet of pipe-laying and backfilling operations in any trench section, the contractor shall rake and drag all disturbed areas and leave them free of rocks, gravel, clay, or any other foreign material and ready, in all respects, for seeding. The finished

surface shall conform to the original or design surface and shall be free-draining and free from holes, rough spots, or other surface features detrimental to a seeded area.

D. After backfilling the trenches, the contractor shall restore all public and private irrigation and/or utility systems that were destroyed, damaged, or otherwise modified during construction to their original condition or better.
E. All areas disturbed by the contractor's operations inside dedicated rights-of-way or easements shall be returned to their original condition or better. Areas outside the easements or rights-of-way that are disturbed by the contractor's operations shall be returned to their original condition or better.
F. All site restoration and cleanup work as described above shall be performed by the contractor within 5 working days of substantial completion of the work associated with the disturbance unless otherwise approved by the City Engineer.

Street Cleanup

A. The contractor shall clean spilled soil, mud, rock, gravel, or other foreign material caused by construction operations from all sidewalks, gutters, streets, and roads at the conclusion of each day's operation.
B. Within five (5) working days of substantial completion of the project, including all paving, gravel shoulder resurfacing, and/or utility work, the contractor shall thoroughly remove all soil, mud, rock, gravel, and other foreign material from sidewalks, gutters, and paved surfaces.
C. Cleaning shall be by grader and front-end loader, power brushing, vacuuming, and hand labor, unless otherwise approved by the City's authorized representative. If the contractor does not follow these standards, the City may exercise its option to have the street(s) cleaned and bill the contractor for such service.
D. Within five (5) working days of final completion of the project, the contractor shall remove all erosion-control materials and thoroughly remove all dirt, mud, rock, gravel, and other foreign material from sidewalks, gutters, catch basins, curb inlets, area drains and paved surfaces.

Preservation of Irrigation and Drainage Ditches

A. The contractor shall arrange schedules so that construction will not interfere with the irrigation of cultivated lands or pasturelands. Construction may proceed during the irrigation season provided the contractor constructs, at their own expense, temporary irrigation ditches, turnouts, and miscellaneous structures acceptable to the owner of the land in question that shall permit the land to be irrigated by others during construction.
B. After backfilling the trenches, the contractor shall restore all irrigation and storm drain ditches destroyed, damaged, or otherwise modified during construction to a condition equivalent, in the opinion of the City's authorized representative, to the condition of the ditches before construction. Ditches shall be built in their original locations.

1.17.17 Project Closeout

Project Completion: At the conclusion of the project, the applicant shall notify the City's authorized representative in writing that the project is ready for final inspection. On receipt of this notice, the City's authorized representative will request the following:

A. **Record Drawings:** At the completion of construction, the design engineer shall perform a record survey. That survey shall be the basis for the preparation of record drawings that will serve as the physical record of changes made to the approved plans or specifications during construction.
    1. The engineer shall submit, along with the record drawings, a statement certifying all work for which plans were approved has been completed in accordance with the

Independence Public Works Design Standards and Standard Specifications and design documents.

2. The words "Record Drawing" shall appear as the last entry in the revision block along with the month, day and year the record drawings were prepared.
3. Using the record survey as a guide, the appropriate changes shall be made and a complete set of record drawings shall be submitted on paper to the City for review.
4. The actual location and depth from finish grade of any other utilities encountered during construction shall be noted on record drawings.
5. Once approved, a final set of approved record drawings will be submitted in Mylar™ material (minimum 4-mil thickness) or heavier double matted static free polyester film.
6. The review set of the Record Drawings must be received before the City's authorized representative issues a project correction list (commonly known as punch-list). Record drawings shall include all work done within the public right-of-way or public easements.

B. **Electronic Drawing:** An electronic copy of the record drawings in AutoCAD format (check with City for acceptable versions) and scaled Adobe PDF shall be submitted to the City's authorized representative on a thumb drive or by internet file transfer. Electronic record drawings must be received before the City's authorized representative issues a written notice of project completion.

C. **Final Inspection:** Once the City's authorized representative receives the record drawings, a final inspection of the project will be conducted by the City Engineer.

D. **Project Correction List:** After this inspection, a project correction/repair list (punch-list) will be issued by the City Engineer to the applicant and contractor. The project correction/repair list will include any items either damaged or improperly placed during construction, and any item(s) that, in the opinion of the City Engineer, need repair.

E. **Project Corrections:** Contractor shall perform correction/repair work as required on the project correction/repair list. The City encourages the contractor to complete all correction/repair work as expeditiously as possible; the City will retain the performance assurance until the project correction list has been completed, and inspected and approved by the City Engineer, and the contractor submits all maintenance and landscape maintenance assurances to the City.

F. **Completion:** When all items of the project correction list have been completed, re-inspected, and approved by the City Engineer, and the contractor provides the City with maintenance assurance and warranty as specified in Subsection 1.17.18, “Maintenance Assurance and Warranty”, the City's authorized representative will consider the project complete and shall state so in writing. The two (2) year warranty period will go into effect on the date of the written notice of project completion from the Public Works Department.

1.17.18 Maintenance Assurance and Warranty

Maintenance Assurance: Maintenance assurances shall be required for work to ensure post-construction quality and landscape survivability. Assurances shall be in the form of a letter of credit, assignment of deposit, bond, or cash deposit, in form and substance satisfactory to the City and meeting the requirements in Subsection 1.15.9, “Qualifications of Insurance and Bonding Companies”.

A. **Construction maintenance assurance:** A two (2) year bond for 40% of the cost to construct public improvements. Prior to the end of the bond, the City will inspect the project and provide contractor with a maintenance project corrections list; the City reserves the option to video inspect the sanitary and/or storm sewer lines. Contractor shall make all necessary repairs and replacements to remedy any and all defects, breaks, or failures of the public improvements as identified by the City and having occurred within two (2) years following

the date of completion due to faulty or inadequate materials or workmanship, in a manner satisfactory to the City Engineer and at no cost to the City. Contractor shall repair damage or disturbances to other improvements under, within, or adjacent to the public improvements, whether or not caused by settling, washing, or slipping, when such damage or disturbance is caused, in whole or in part, from activities of the Contractor in performing his/her duties and obligations under this Contract when such defects or damage occur within the warranty period. Bond shall be released after acceptance of construction and after correction of all defects identified during the maintenance assurance period.

B. **Prompt compliance:** If Contractor, after written notice, fails within 10 days to proceed to comply with the terms of this section, Owner may have the defects corrected, and Contractor and Contractor's Surety shall be liable for all expense incurred. In case of an emergency where, in the opinion of the Engineer, delay would cause serious loss or damage, repairs may be made without notice being given to Contractor and Contractor or Surety shall pay the cost of repairs. Failure of the Engineer to act in case of an emergency shall not relieve Contractor or Surety from liability and payment of all such costs.

C. **Water lines:** In addition to provisions above, City of Independence water line facilities installed by the contractor under the Public Works Permit contract that require repair or replacement during the two (2) year maintenance period shall be repaired by the City or under direct supervision of the City. The Contractor and Contractors surety will be liable for all expenses.

D. **Landscape maintenance assurance:** A two (2) year bond for 100% of the cost to install all required landscaping in water quality/quantity facilities and vegetated corridors, *plus* 100% of the cost to maintain the landscaping in these areas for two years. The assurance shall be released two years after acceptance of construction, providing the landscaping meets the 90% survival rate (see Chapter 3).

E. **Final Completion:** A project shall meet final completion when the City Engineer receives confirmation that all easements and legal documents have been recorded with the County Recorder.

1.18 ENVIRONMENTAL PROTECTION, EROSION PREVENTION, AND SEDIMENT CONTROL

1.18.1 Introduction

This section identifies requirements for erosion prevention and sediment control. The provisions are intended to prevent or reduce adverse impacts to the City's drainage system and water quality. In combination with other federal, state, and local laws and ordinances, the requirements are intended to protect the beneficial uses of state waters.

1.18.2 Contaminated Soils or Hazardous Materials

If construction reveals soils contaminated with hazardous materials or chemicals, or if soil is suspected to be contaminated, the contractor shall cease earthwork activity immediately, ensure that no contaminated material is hauled from the site, remove their workforce from the immediate vicinity of the contaminated area (leaving all machinery and equipment), and secure the area from access by the public until an OSHA certified HAZMAT response team has relieved them of that responsibility. The contractor shall immediately notify the City Engineer, the design engineer, and the Oregon Department of Environmental Quality (DEQ) of the situation.

1.18.3 General Policy

A. **Erosion Prevention Techniques and Measures**

1. The use of erosion prevention techniques shall be emphasized, rather than measures to control sediment. This shall be especially important on construction sites immediately

before and during the rainy season. Erosion prevention techniques are designed to protect soil particles from the force of rain and wind so they shall not erode. When land is disturbed at a construction site, the erosion rate accelerates dramatically.

2. Erosion prevention techniques include, but are not limited to, construction scheduling, ground cover, and matting. Sediment control measures are designed to capture soil particles after they are dislodged and to retain the soil particles on site.
3. Erosion prevention measures include, but are not limited to, silt fences, sediment barriers, and settling basins. Both erosion prevention techniques and sediment control measures have appropriate uses. Studies have shown, however, that sediment control measures are less effective than erosion prevention techniques in preventing soil movement.
4. Permanent vegetation or seeding shall be established only between March 1 through May 15 and September 1 through October 15. If an irrigation system is installed, vegetation or seeding may be established from March 1 through October 15. If an area falls under definition of a wetland, permanent vegetation or seeding shall be established only between March 1 through April 30 and September 1 through October 15 and in a manner satisfying applicable local, state and federal requirements.
5. Permanent vegetation or seeding shall meet the 90% survival rate as detailed in Chapter 3.

B. Existing Vegetation

1. Existing vegetation shall be protected and left in place whenever practicable. Work areas shall be carefully located and marked to reduce potential damage to trees and existing vegetation. Trees shall not be used as anchors for stabilizing working equipment. Where required, trees and existing vegetation shall be protected with a non-movable, chain link fence.
2. Where existing vegetation has been removed, or the original land contours have been disturbed, the site shall be revegetated, and the vegetation established, as soon as practicable.

C. Enforcement

1. Failure to comply with any provision of this section or with any term of an erosion-prevention and sediment-control permit shall be deemed a violation and subject to enforcement action pursuant to applicable State statutes, State agency policies, City ordinances, resolutions, and orders, including all implementing rules and regulations.

1.18.4 Erosion Prevention and Sediment Control

A. Application and Purpose

1. It is a City goal to eliminate or minimize to the extent feasible all sediment and other pollutants reaching the public storm and surface water system resulting from development, construction, grading, excavating, clearing, and any other activity that accelerates erosion, to the limits prescribed in these standards.
2. It is the policy of the City to require temporary and permanent measures for all construction projects to lessen the adverse effects of construction on the environment. All projects shall have a current DEQ 1200-C permit, as required by the state, and include properly installed, operated, and maintained temporary and permanent erosion-control measures as provided in these standards or in an approved plan, designed to protect the environment during the term of the project. Compliance with the measures prescribed here or in an approved plan do not lessen the necessity to provide effective and comprehensive erosion prevention and sediment control.

3. It is the permit holder's responsibility to comply with DEQ 1200-C requirements and DEQ's responsibility to enforce the permit requirements. Nothing in this section shall relieve any person of the obligation to comply with the regulations or permits of any federal, state, or local authority.

B. **Erosion Prohibited**

1. Visible or measurable erosion that enters, or is likely to enter, the public or private stormwater and surface water system or other properties is prohibited and is a violation of these standards. An offsite sedimentation control facility may be utilized if it has been identified and approved in writing by the City Engineer, written approval is obtained from the respective property owner, and a written agreement for rehabilitation of the facility by the applicant or contractor is submitted to the City. The owner of the property or the applicant under a Public Works Permit, together with any person(s), including but not limited to the contractor or the design engineer causing such erosion, shall be held responsible for violation of the City's standards.
2. No person shall create physical erosion by dragging, dropping, tracking, or otherwise placing or depositing, or permitting to be deposited, mud, dirt, rock, or other such debris on a public street, or into any part of the public stormwater and surface water system, or into any part of a private stormwater and surface water system that drains or connects to the public stormwater and surface water system. Any such deposited material shall be immediately removed by hand labor or mechanical means. No material shall be washed or flushed into any part of the stormwater and surface water system until all mechanical means to remove the debris are exhausted and preventive sediment filtration is in place.
3. The owner of the property or the applicant under a Public Works Permit, together with any person(s), including but not limited to the contractor or the design engineer who causes such erosion, shall be held responsible for violation of these Standards.

C. Erosion-Prevention Techniques and Methods

1. The techniques and methods described in the latest edition of Clackamas County Water Environment Services "Erosion Prevention and Sediment Control Planning and Design Manual" may be used to control and prevent erosion in addition to the following procedures:

   a. **Gravel Construction Entrance**

      1. A gravel construction entrance is required for all construction projects unless otherwise approved by the Public Works authorized representative. If there is more than one vehicle access point, a gravel construction entrance shall be required at each entrance.
      2. For project sites 5 acres or greater in size, a wheel wash will be required to be constructed. For sites less than 5 acres in size, a wheel wash may be required if, in the opinion of the City Engineer, excess tracking of soil occurs.
      3. The responsibility for design and performance of the driveway remains with the applicant. Vehicles or equipment shall not enter a property next to a stream, watercourse, stormwater or surface water facility, or wetlands unless adequate measures are installed to prevent physical erosion into the water or wetland.

   b. **Erosion Control**

      1. During periods of wet weather, disturbed areas of the site and/or stockpiled soil shall be covered by tarps or straw at the end of each day's operations; all disturbed, unworked areas of the site shall be protected from erosion.
      2. Temporarily seed disturbed soils and slopes that are not at finished grade and which will be exposed for two months or longer before being disturbed again.

3. Where seeding is used for erosion control, Regreen® or equivalent, or sterile wheat shall be used to stabilize slopes until permanent vegetation is established.
4. Temporary seeding shall establish a minimum of 70% coverage of the ground surface with uniform healthy plants. If this coverage is not achieved, or if the City determines that it is not effective in stabilizing the soil from erosion, the contractor, at their expense, shall stabilize the area with other temporary stabilization methods as approved by the City Engineer.
5. Biodegradable fabrics (Coir/Jute Matting), reinforced turf mats, or straw mulch can be used to stabilize slopes and channels. The fabrics can also be used to hold plugs in place and discourage floating upon inundation. Consult the *Erosion Prevention Planning and Design Manual (EPPDM)* for additional information.
6. Permanent vegetation shall be established as outlined in "Erosion Prevention Techniques and Measures."

c. **Bioengineering Techniques**
   1. Any person performing work in a watercourse or in an environmentally sensitive area (e.g., essential salmonid habitat, wetlands, and steep slopes) shall employ bioengineering techniques whenever feasible.
   2. Bioengineering techniques include, but are not limited to, contour wattling, brush layering or matting, live cuttings, fascines, and stakes.

d. **Sediment filters/barriers**
   1. Using straw bales as a sediment filter or barrier is not allowed.
   2. A filter system may not be used on catch basins in public streets as part of erosion-prevention and sediment-control plans for single-family dwellings.

e. **Plastic Sheeting:** Plastic sheeting shall generally not be used as an erosion-control measure for single-family house construction. Plastic sheeting may be used to protect small, highly erodible areas or temporary stockpiles of material. If plastic sheeting is used, the path of concentrated flow from the plastic must be protected.

f. **Protection Measure Removal:** The erosion-prevention and sediment-control measures shall remain in place and be maintained in good condition until all disturbed soil areas are permanently stabilized by installation and establishment of landscaping, grass, mulching, or are otherwise covered and protected from erosion.

g. **Wet Weather Measures:** On sites where vegetation and ground cover have been removed, vegetative ground cover shall be planted on or before September 1, with the ground cover established by October 15. As an alternative, if ground cover is not established by October 15, the open areas shall be protected through the winter with mulch, erosion blankets, or other method(s) approved by the City's authorized representative.

h. **Exceptions to Sediment Barrier Requirements:** Sediment barriers are not required on a site in the following circumstances:
   1. Where a Neighborhood Erosion Control Plan is in effect, for a maximum of four lots.
   2. Where there are no concentrated flows and the slope being protected has a grade of less than 2%.
   3. Where flows are collected by using temporary or permanent grading or other means, such that the flows are routed to an approved settling pond, filtering system, or sediment barrier.
   4. Where there are no concentrated flows, where slopes are less than 10%, and where the runoff passes through a grassed area that is either owned by the

applicant or where such use is allowed, by written agreement, by the owner of the grassed area. The grass area shall be at least equal in dimension to the project area.

5. Where the surface is protected by ground cover or matting approved by the City's authorized representative.

i. **Dust Prevention**

During all phases of the work, the contractor shall take precautions to abate any dust nuisance. Dust-prevention measures shall be continuous until final inspection by the City's authorized representative. Dust shall be minimized to the extent practicable, using all measures necessary to accomplish results satisfactory to the City's authorized representative, including, but not limited to:

1. Sprinkling haul and access roads and other exposed dust-producing areas with water.
2. Applying City-approved dust palliatives on access and haul roads.
3. Establishing temporary vegetative cover.
4. Placing wood chips or other effective mulches on vehicle- and pedestrian-use areas.
5. Maintaining proper moisture conditions on all fill surfaces.
6. Pre-wetting cut and borrow area surfaces.
7. Using covered haul equipment.

j. **Neighborhood Erosion Control Plan**

1. Any individual or group may submit an erosion-prevention and sediment-control plan for multiple lots. Plans shall be submitted to City of Independence for review and approval. This shall be referred to as a "Neighborhood Erosion Control Plan." In such cases, the group of lots will be evaluated as if they were one lot.
2. If an individual lot in a Neighborhood Erosion Control Plan is sold to new owners, the new owners may either join the neighborhood plan (with the approval of the other neighborhood owners) or will need to submit their own erosion control plan if erosion potential still exists on the parcel. If a lot is sold and the new owner does not join the Neighborhood Erosion Control Plan, then the plan must be revised, and the new owner must submit an individual plan.

1.18.5 Maintenance

A. The applicant shall maintain the facilities and techniques contained in the approved erosion-prevention and sediment-control plan, so they will continue to be effective during the construction phase, post construction phase, establishment of permanent vegetation, or any other permitted activity.

B. If the facilities and techniques approved in an erosion-prevention and sediment-control plan are not effective or sufficient as determined by the City site inspection, the applicant shall submit a revised plan within three working days of written notification by the City's authorized representative. On approval of the revised plan by the City's authorized representative, the applicant shall immediately implement the additional facilities and techniques included in the revised plan.

C. In cases where erosion is likely to occur, the City's authorized representative may require the applicant to install interim control measures before submitting a revised erosion-prevention and sediment-control plan.

1.18.6 Inspection

A. **City Initial Inspection:** On a site development or any other type of project, the erosion-prevention and sediment-control measures shall be installed before the start of any permitted activity. The applicant shall call the City's authorized representative for a pre-construction conference before beginning any site clearing or grading.

B. **Applicant Inspections**: The applicant shall be required to inspect erosion-prevention and sediment-control measures as outlined in the approved Grading and Erosion Control Plan and to provide information to the City's authorized representative. Inspections shall be completed as required by the latest edition of the *Erosion Prevention Planning and Design Manual* and the Minimum Erosion Prevention and Sediment Control Plan Monitoring Requirements. Inspection information is to be maintained on-site and available to City Engineer on request.

C. **Final Inspection:** A final erosion control inspection shall be required before the sale or conveyance to new property owner(s) or before the removal of erosion-prevention and sediment-control measurements.